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Children on the Brink: Strategies to Support a Generation Isolated by HIV/AIDS tells a powerful and deeply disturbing story of crisis proportions. More than 40 million children in 23 developing nations will likely have lost one or both their parents by 2010. Most of these deaths will be the result of the HIV/AIDS pandemic and complicating illnesses. The human and social costs of these numbers are staggering.

In countries across Africa, Asia and Latin America, HIV/AIDS is unraveling years of progress in economic and social development. Life expectancy — which has been steadily on the rise for the last three decades — will drop to 40 years or less in nine sub-Saharan countries by the year 2010. In all 23 countries included in this study, AIDS-related mortality will eliminate the gains made in child survival over the past 20 years. In Zambia and Zimbabwe, infant mortality rates will likely nearly double, and child mortality rates will triple. The economies of the developing nations in this study will all struggle to deal with the immense economic dislocation and costs of illness, death and lost opportunity. And while the bulk of countries in this study are in Africa, this report should also serve as a grave reminder of similar storm clouds gathering now in Asia and Latin America, and of the terrible toll the HIV/AIDS crisis will claim on those continents' children.

This report provides a compelling demographic portrait of an immense problem. However, more important than the numbers contained in this study is the human story they tell. Forty million children losing one or both of their parents are 40 million children more likely to be forced into child labor; 40 million children who may never have an opportunity to attend school; and 40 million children more at risk of contracting HIV. This study should serve as a call to action for developed and developing nations alike. We cannot risk losing an entire generation of children to despair, ill health and hopelessness.

J. Brian Atwood

Administrator, U.S. Agency for International Development

Cover Photo: FAO Photo, Uganda 1994

Since his father died of AIDS 18 months ago, and his mother ran away to find a new life, Ismail, 18, looks after his eight brothers and sisters, including a three year-old sick with AIDS. His paternal aunts are trying to take the land away from Ismail and his siblings, and they often take the plantain bananas Ismail grows as a staple to feed the family. The region around Ismail's town of Rakai in Uganda was initially the hardest hit by AIDS, but the virus has now spread throughout the country, and the death toll is mounting around the nation.

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Children on the Brink

Strategies to Support Children Isolated by HIV/AIDS

In the countries most affected by HIV/AIDS, there has been growing concern over the number of orphans, a problem that has increased largely as a result of the pandemic. It has been difficult to track this trend because there are few estimates of the number of orphans caused by AIDS and because those estimates that do exist often are not comparable from one country to another. However, the needs of these children and their growing numbers mean that governments, donors, nongovernmental organizations, religious bodies, and others concerned about child welfare must take this trend seriously.

According to the U.S. Census Bureau, 15.6 million children will have lost their mothers or both of their parents by 2000 in 23 countries heavily affected by HIV/AIDS. That number will increase to 22.9 million by 2010, largely as a result of the HIV/AIDS pandemic. Nineteen of these countries are in Sub-Saharan Africa, where by 2010 these orphans will comprise up to 8.9 percent of children under age 15. The sheer size of the population at risk for HIV/AIDS in Asia means that the problem of orphaning there will eventually eclipse that of Sub-Saharan Africa. The number of orphans will continue to grow in Latin America and the Caribbean, where the pandemic started later.

The Census Bureau has estimated the number of maternal orphans (children who have lost their mothers) and double orphans (those who have lost both parents) in 23 countries hard-hit by HIV/AIDS.¹ The number of orphans in these countries is projected to grow sharply, largely as a result of the epidemic. However, these figures do not convey the full impact of HIV/AIDS on children and families in

¹ This study includes 21 countries where urban seroprevalence — the percent of the population infected with HIV — is over or near 5 percent, as well as two countries for which sufficient data are available to estimate the effect of HIV/AIDS on mortality. A full list of the study countries appears on page 6.

Children on the Brink: Strategies to Support Children Isolated by HIV/AIDS

Orphans are classified into three types:

Maternal orphans are children under age 15 whose mothers have died.

Paternal orphans are children under age 15 whose fathers have died.

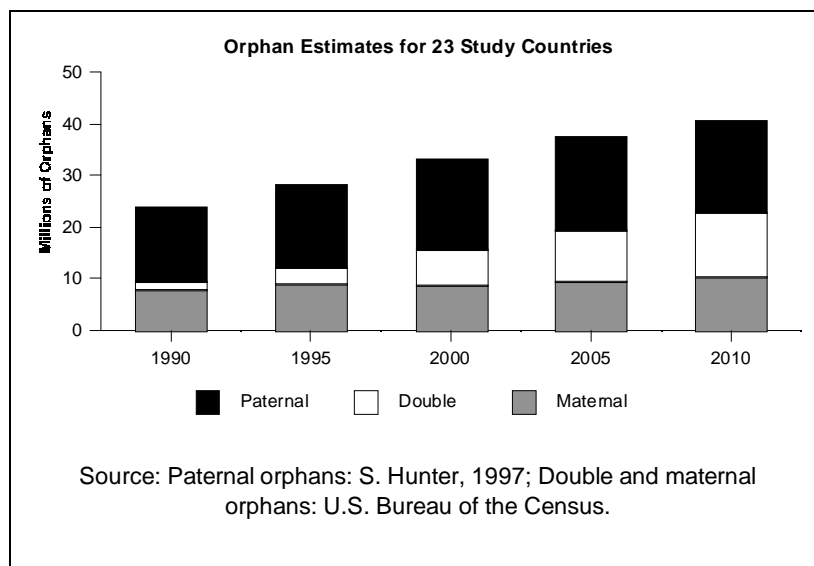
Double orphans are children under age 15 whose mothers and fathers have both died.

The total number of orphans is the sum of the numbers in each category.

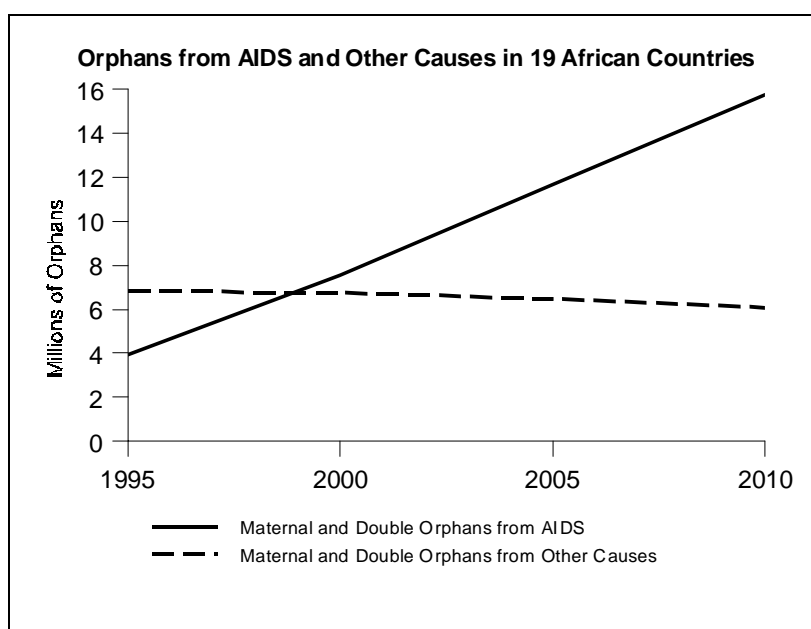
these countries. In order to develop a fuller picture of this impact, the U.S. Agency for International Development (USAID) contracted two independent researchers to expand the Census Bureau estimates of maternal and double orphans to include the number of paternal orphans (children who have lost their fathers).

Tracking the projected growth in the number of paternal orphans provides a better understanding of the impact of HIV/AIDS on children, for several reasons. The loss of a parent has profound significance for a child. The death of a mother, in particular, has dramatic psychosocial consequences. Children lose love and nurturing, and their households may break up, with siblings sent to live with different members of the extended family. Loss of a father often means the loss of income and results in economic deprivation. When a father dies of AIDS, the children often lose their mother as well, to illness or for social reasons.

When paternal orphans are included, the total number of orphans from all causes is projected to increase from 34.7 million in 2000 to 41.6 million in 2010 in these 23 countries.



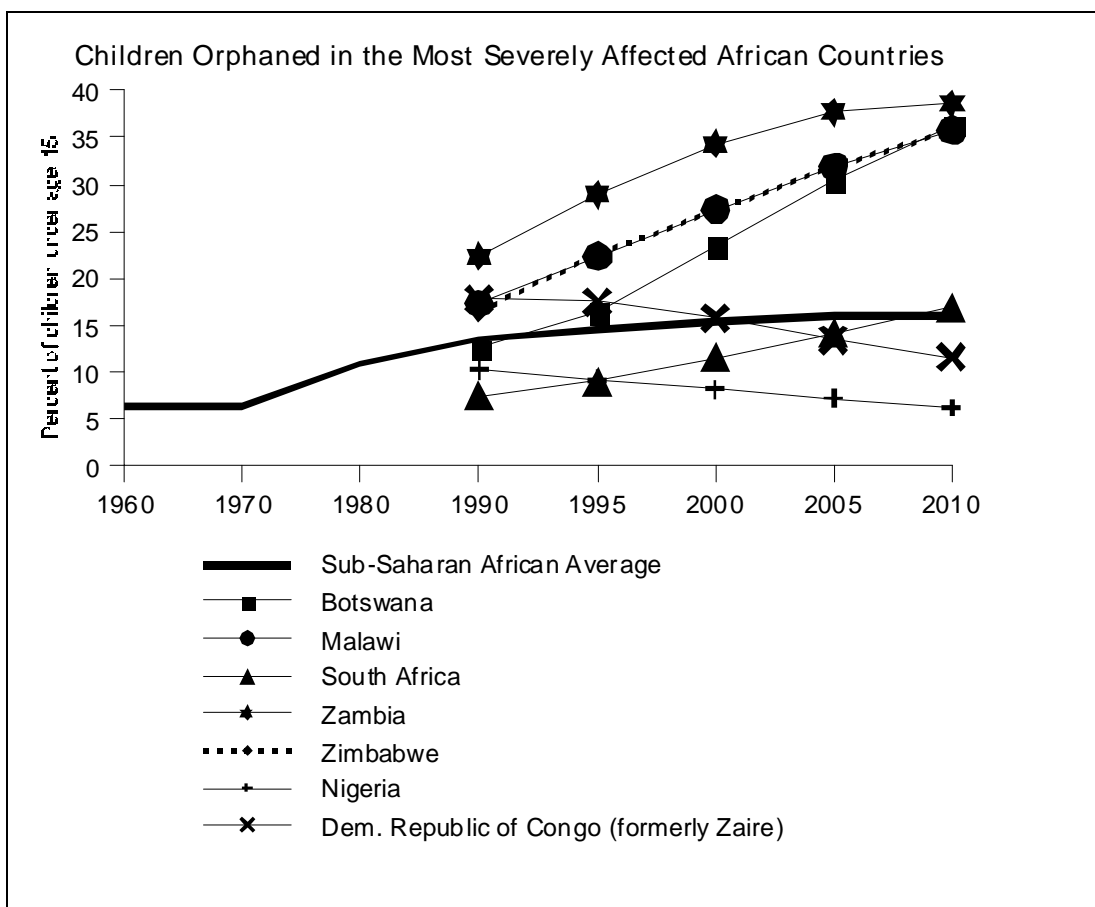
The growing number of orphans will have a profound impact on the societies in which they live. Orphans may suffer the loss of their families, depression, increased malnutrition, lack of immunizations or health care, increased demands for labor, lack of schooling, loss of inheritance, forced migration, homelessness, vagrancy, starvation, crime, and exposure to HIV infection. With orphans eventually comprising up to a third of the population under age 15 in some countries, this outgrowth of the HIV/AIDS pandemic may create a lost generation — a large cohort of disadvantaged, undereducated, and less-than-healthy youths. The threat to the prospects for economic growth and development in the most seriously affected areas is considerable.



The vulnerabilities of these children are increased by the geographic concentration of the HIV/AIDS pandemic — vulnerable children are cared for by vulnerable families and reside in vulnerable communities. Many of the communities most affected by HIV/AIDS are impoverished and isolated. Left with little or no outside assistance, some have devised creative programs to identify and assist the needy families in their midst, and there are similarities among these community-based responses. For example, many include mechanisms for assessing the needs of families and for monitoring the welfare of affected children. Many also include labor-sharing arrangements for day care and nutrition centers, agricultural work and other income-generating projects, home repair, and home care for the ill and for orphans. Paradoxically, these community-based support systems may be the least visible but most cost-effective ways to help families affected by HIV/AIDS.

Our experience with orphaning as a social problem is limited. Historically, orphaning on a large scale has been a sporadic, short-term problem, caused by war, famine, and disease. HIV/AIDS has transformed orphaning into a long-term, chronic problem that will extend into the next century. The serious social and economic dislocation that will result from the large and growing proportion of children who are orphaned will require comprehensive, creative, and long-term solutions.

In addition, we know that the impact of HIV/AIDS will vary widely from country to country, even within regions of high seroprevalence. For example, on average 16.2 percent of children under the age of 15 will be orphaned from all causes in the 19 African study countries by 2010, but that proportion will be over 25 percent in eight of these countries (Rwanda, Tanzania, Uganda, Botswana, Malawi, Zambia, Zimbabwe, and Burkina Faso).



The problems of children affected by HIV/AIDS begin long before their parents die and extend beyond their individual households to affect relatives, neighbors, and whole communities. Interventions to respond to AIDS orphaning therefore must target communities and must include *all* children affected by HIV/AIDS, not just those whose parents have been infected with HIV or have died from AIDS.

Coupled with the displacement of children from other causes, including natural disasters, war, and genocide, the number of children without parents promises to be extraordinary in some countries. Even if development assistance were increased, which is unlikely, it will be inadequate to address the problem. New approaches — including policy innovations for women and children — must be developed within the next few years to nurture and develop local efforts to assist families and communities.

This report was developed by two independent researchers contracted by USAID to review the situation of AIDS orphans. The authors, who have been engaged in assessing and addressing this problem for several years, reviewed and synthesized a substantial amount of information available on children affected by HIV/AIDS in developing countries.

The study includes Bureau of Census estimates of maternal and double orphans caused by AIDS and by other causes in 23 countries, as well as complementary estimates of the population of paternal orphans, developed by one of the authors using census data from developing countries and previous large- and small-scale studies of orphans. The report also describes how the burden of increased orphaning is affecting individuals, families, and communities and what the response has been by those affected as well as by governments and aid organizations. The authors identify issues that need to be discussed and considered by organizations that seek to address development, child welfare, or HIV/AIDS issues. Finally, the

HIV/AIDS AND ORPHANS

Orphanhood peaks seven to ten years after seroprevalence.

Orphan populations in Sub-Saharan Africa will continue to grow until at least 2010 and may not peak in some countries until after 2020.

The problem, already serious, will become much worse.

By 2010, about 13.5 percent of children under age 15 in the study countries will lose one or both of their parents to AIDS and other causes.

In the four non-African study countries, the number of orphans peaks earlier because of declining fertility rates and decreases in the number of children born, rather than to declining HIV-infection rates.

Initial seroprevalence is lower in West Africa, and therefore the epidemic may peak at a lower level and later than in other parts of Sub-Saharan Africa.

authors provide their perspective on guidelines for assisting children, families, and communities affected by HIV/AIDS and outline six intervention strategies.

THE 23 COUNTRIES IN THIS STUDY

Nineteen of the countries included in this study were selected because their seroprevalence — the percent of the population infected with HIV — was estimated to be greater than 5 percent in urban areas. Four additional countries are included: two where seroprevalence is approaching 5 percent; and two for which there were sufficient data to estimate AIDS mortality and orphaning rates.

East Africa

Burundi
Ethiopia
Kenya
Rwanda
Tanzania
Uganda

Southern Africa

Botswana
Lesotho
Malawi
South Africa
Zambia
Zimbabwe

West and Central Africa

Burkina Faso
Cameroon*
Central African Republic
Congo
Côte d'Ivoire
Democratic Republic of the Congo
(formerly Zaire)
Nigeria*

Outside Africa

Brazil**
Guyana
Haiti
Thailand**

* Seroprevalence approaching 5 percent.

** Seroprevalence less than 5 percent, but sufficient data available to estimate mortality using special modeling scenarios.

• THE DEMOGRAPHIC EFFECTS OF HIV/AIDS

In 1994, the U.S. Census Bureau estimated the impact of AIDS deaths on the populations of 14 countries that had seroprevalence levels in urban areas above 5 percent.² In 1996, 19 countries had reached this seroprevalence threshold, all but two of which are in Sub-Saharan Africa. This study focuses on these 19 countries, as well as two countries where seroprevalence is approaching 5 percent and two additional countries for which sufficient data are available to accurately estimate the impact of HIV/AIDS. (See Annex Figure A-1 for the projected impact of HIV/AIDS in these 23 countries.)

² Seroprevalence is the percent of the population that is infected with HIV.

Countries may experience the most severe demographic effects of HIV/AIDS years after the height of the epidemic. For example, the number of orphans peaks seven to ten years after seroprevalence. These demographic effects are now apparent and are expected to increase in Sub-Saharan Africa, where the epidemic began early. They will become increasingly evident in the next decade for countries in Latin America and Asia, where the epidemic began later.

- **Total Population Loss.** By 2010, the total population loss resulting from AIDS in these 23 countries is expected to be 76.2 million. The six East African countries in this group are expected to lose 28.6 million people, the six Southern African countries are expected to lose 17.3 million people, and the seven Central and West African countries are expected to lose 18.9 million people. The population loss in the four non-African countries is projected to total 11.4 million. These losses will be the result both of very large increases in adult and child mortality and from low fertility rates, as well as to some reduction in births caused by the premature death of women of childbearing age.³
- **Population growth rates.** AIDS is expected to reduce population growth rates to less than half of their expected levels by 2010, and they may remain low or negative for many years. In most countries, total population growth will remain positive because fertility rates will remain high. However, in three countries — Botswana, Guyana, and Zimbabwe — fertility rates may drop sufficiently to result in negative population growth by 2010. Growth rates may

THE DEMOGRAPHIC EFFECTS OF HIV/AIDS

Crude death rates may double or triple, and life expectancy may fall.

Population growth may flatten or become negative.

Infant and child mortality may increase to levels that are two to five times those that would be expected without HIV/AIDS.

Dependency ratios may worsen due to AIDS-related illnesses among adults.

The age distribution of the population in some areas will be affected by HIV/AIDS, which has a greater impact on young people.

Gender ratios may shift in some age groups because of higher infection rates and mortality in women.

The number of widows may increase, and their socioeconomic condition may worsen.

Household composition will change as middle-aged parents die, and grandparents are left to raise young children.

³ There are differences among the estimates of such effects made by various authorities such as the U.S. Census Bureau, the United Nations Population Division, and the World Bank. However, these differences are relatively small and result as much from differences of opinion about future fertility rates as from differences of opinion about the impact of HIV/AIDS on mortality.

near zero in Malawi and may slow to about 1 percent in the Central African Republic, Kenya, Lesotho, Rwanda, South Africa, Zambia, and Tanzania.

- **Crude death rates.** Crude death rates may be more than 1.5 times their present levels for these countries overall, but the effects will vary by country. For example, crude death rates are projected to increase by half in Ethiopia but to more than double in Tanzania and Uganda. In the hardest-hit countries, including Zambia, Zimbabwe, and Malawi, crude death rates may increase by three to six times. The social costs of the rising number of AIDS deaths will be numerous, including disruption of family and social structures and the omnipresence of anxiety and grief.
- **Fertility rates.** Based on current trends, fertility rates can be expected to decline only gradually in Sub-Saharan Africa, resulting in sustained increases in the total population despite the increased mortality. Most simulation models assume that HIV/AIDS will have no direct effects on fertility, which means that seroprevalence levels would have to reach about 50 percent to offset the high natural rates of population increase in most countries. However, a recent survey in the Kagera Region of Tanzania suggests that increased adult mortality reduces people's desire for additional children. This effect is evident at the community and household levels and is most pronounced when there have been recent female deaths, presumably because of the added burden of orphans on the surviving females. Other studies suggest that HIV has lowered pregnancy rates. Increases in child mortality — another result of HIV/AIDS — generally increase people's desire for more children, but this effect has not been sufficient to balance the decreases in the number of births caused by adult deaths. More data are needed in this vital area because of the strong implications for future birth rates.
- **Life expectancy.** Since AIDS kills proportionately more young adults and children, it will have a pronounced effect on life expectancy at birth in many countries. Life expectancy will drop to 40 years or less in nine Sub-Saharan African countries by 2010. Botswana, Kenya, South Africa, Zambia, and Zimbabwe would have had life expectancies of 60–70 years without HIV/AIDS but will suffer severe setbacks. Other countries that were making more modest but significant improvements in life expectancy will also see severe reductions, including Burkina Faso, Central African Republic, Malawi, Tanzania, and Uganda.
- **Age distribution.** HIV/AIDS also affects the age distribution of a population. Currently, in all areas of the world except North America, Europe, the former Soviet Union, and Oceania, the number of children under age 4 is greater than

the number of the adults over age 59. In Asia, the Near East, Northern Africa, and Latin America and the Caribbean, this situation will change, and the elderly will begin to outnumber the very young within the next decade. In Sub-Saharan Africa, however, children under age 5 will continue to outnumber adults over age 44. According to the Census Bureau, there will be 12 times as many children under age 15 as adults over age 64 in Sub-Saharan Africa.⁴ The proportion of the world's children under age 15 who live in developing countries will near 90 percent in 2020. As a consequence, the impact of the epidemic on children and their families will be more substantial in those countries.

AIDS mortality is less concentrated in specific age groups than, for example, deaths caused by war. Nonetheless, the populations of countries severely impacted by HIV/AIDS will be considerably different than they would have been without HIV/AIDS. In general, population pyramids, which chart the age breakdown of a population and show the youngest segments at the bottom, will be less broad at the bottom reflecting a decrease in the number of people in younger age groups. As with other population effects of HIV/AIDS, the impact will vary by country depending on the age and severity of the epidemic.

- **Infant and child mortality.** HIV/AIDS has a profound effect on the mortality of infants (under 1 year of age) and children (under age 5), as a result of interuterine infection and perinatal transmission. In all 23 countries included in this study, AIDS-related mortality will eliminate the gains made in child survival over the past 20 years. The effects will be most pronounced in those countries that have made the greatest progress in reducing infant and child mortality. In Zambia and Zimbabwe, infant mortality rates may nearly double, and child mortality rates may triple. In Kenya and Uganda, infant mortality rates are projected to increase by 50 percent, and child mortality rates are projected to double. The effects may actually be more severe, however, because there may also be increased mortality among HIV-negative children who live with an HIV-infected parent because their nutrition, health, and survival rates may be poorer than for other children. The number of children living with an HIV-infected parent in Thailand, for example, are expected to be more than twice the number of orphans by 2005, although this group will diminish as more infected parents die of AIDS.
- **Dependency ratios.** Overall, HIV/AIDS will have only a slight impact on dependency ratios — the ratio of dependents to economically active adults —

⁴ T. McDevit, *World Population Profile: 1996*. Washington, DC: U.S. Government Printing Office, 1996.

because the epidemic kills children as well as adults. However, dependency ratios can vary considerably in the short-term and in particular areas according to the age of the epidemic and geographic variations in seroprevalence. These short-run changes may require considerable social adjustment. Moreover, dependency ratios may mask the economic effects of the increased dependency of adults sickened by HIV/AIDS and the fact that young people affected by HIV/AIDS often leave school or enter the labor force at earlier ages.

- **Gender ratios.** Women face a higher risk of HIV infection than men. If HIV/AIDS mortality is more concentrated in women, there may be fewer economically active females. Because women are much more likely than men to be family caretakers, this will affect the well-being of children and families. There may also be a change in the gender ratios in certain age categories — for example, there could be 1.5 men for every woman in some Sub-Saharan African countries within the next 20 years.
- **Widow(er)hood.** The proportion of women who are widowed increases in earlier years of the epidemic, although the duration of widowhood will decrease if women are infected and die as a result. Older people will experience economic setbacks because of the loss of support from their children who die from HIV/AIDS. Those who will lose the most are elderly women, who not only will be burdened by caring for the very young but will also experience a drastic deterioration in their social and material resources for coping with this burden. The vulnerability of grandmothers will ultimately affect the grandchildren in their care.
- **Household composition and/or co-residence.** With increased mortality among adults aged 19 to 49, those in older age groups will assume more responsibility for providing care for the family and for the ill. The proportion of households with three resident generations will decrease, as middle-aged parents die and grandparents are left with children. The number of households with orphans, which is already a substantial proportion of the total, will increase. A Ministry of Health study in Zambia estimated that 40 percent of households may have one or more orphans in the future and that 16 percent may be headed by widows. The 1995 Uganda Demographic and Health Study found that 25 percent of all households included foster children under age 15.

THE SOCIOECONOMIC EFFECTS OF HIV/AIDS

In addition to reversing gains in infant and child mortality, adult longevity, and general health, HIV/AIDS threatens to reverse the socioeconomic gains made by many developing countries. The relationship is bidirectional. On one hand, many of the patterns of recent social and economic development created the conditions that have allowed the spread of HIV/AIDS, including male labor migration, underemployment of women, civil strife, refugee movements, urbanization, structural adjustment, and increasing poverty. On the other, HIV/AIDS will cause fundamental social and economic changes in countries with high seroprevalence levels that will affect the demand for labor, the availability of social services, access to health care, educational opportunities, and the rates of poverty at the household level.

THE SOCIOECONOMIC EFFECTS OF HIV/AIDS

Growth of GDP per capita will decline slowly by steadily.

Labor shortages may arise, affecting household production and production in commercial agriculture and industry/

More households will be impoverished because of lost productivity and lost access to markets.

Child labor will increase inside and outside the home because of the scarcity of adult labor.

Nutritional status may suffer because of the decline of household labor for subsistence agricultural production.

Social services will be stressed.

Health care will become less accessible as conditions related to HIV/AIDS stress hospital and home care systems.

School enrollment will decline due to increased mortality of children under age 5 and increasing demands for child labor.

The World Bank's 1993 *World Development Report* noted that HIV infections were a leading cause of disability and death and predicted an annual slowing of growth of income per capita by 0.6 percent in the 10 worst-affected countries in Sub-Saharan Africa. Others argue that net effects may not be visible on the aggregate level. But, as one observer commented about the Asian epidemic,

that doesn't mean...countries aren't paying a price; it's just being exacted at the local level. The economic effects of HIV/AIDS...are felt most strongly by families, communities and [small-scale] industries such as fishing and trucking.⁵

The effects of HIV/AIDS will be uneven among households and communities but will encompass the following areas:

⁵ G. Fairclough, "A Gathering Storm," *Far Eastern Economic Review*, September 21, 1995, p. 26.

- **Social Services.** The added strain and pressure that coping with HIV/AIDS places on families and households may result in increased child abuse and neglect. In many of the countries most heavily affected by HIV/AIDS, social service and welfare agencies are the most understaffed and underfunded parts of the government, and the safety net for impoverished and stressed families is nearly nonexistent. If these types of agencies are strengthened, they can play an important role in assisting children, families, and communities; preventing abuse; and fostering cooperation among nongovernmental and community-based organizations.
- **The well-being of individuals and households.** The costs of HIV/AIDS-related illness and death can be enough to send a household into permanent poverty or from poverty into destitution. Per capita and household income will decline as more families are thrown into poverty by costs of illness, health and hospital care, and support of orphans. The loss of women's labor in the home and in agriculture will create critical deficits in food supplies and potentially in exports. The loss of female caretakers for sick adults and children will lower the overall welfare of families and communities and reduce their ability to provide mutual assistance. As a consequence, children will have weaker household systems of care and protection and will be forced to assume adult roles in the home and in external labor markets.
- **Demand for labor.** HIV/AIDS causes illness and death among adults in the most productive age groups. The costs of absenteeism and reduced productivity may be higher than the costs of eventual deaths. HIV/AIDS will significantly slow the growth of the labor force and will create labor shortages in certain markets. For example, the growth of the number of workers in Thailand is projected to be 12 percent less than anticipated in the 1990s due to HIV/AIDS mortality, which has led some businessmen to pay for HIV/AIDS prevention programs. In many areas of Sub-Saharan Africa, companies are contributing not only to HIV/AIDS prevention programs but also to vocational training and educational programs to develop replacement labor. A study in Uganda estimated there would be 2 million fewer people in the working age groups by 2010, 12 percent less than without HIV/AIDS.
- **Urban poverty.** Higher seroprevalence in urban areas will aggravate the situation of the urban poor more than the rural poor, who have broader household and community support systems and can fall back, to some extent, on household food production as their incomes decline. Reverse migration of urban dwellers to rural farms may provide a safety valve, particularly for HIV-infected people and HIV/AIDS orphans, but large influxes may overwhelm the

resources of rural relatives, particularly if they add to the burden of caring for those ill from HIV/AIDS.

- **Agricultural production.** Household food production will become less labor-intensive and probably less nutritious. Commercial production by smallholders and plantations will be jeopardized as labor is diverted to the immediate demands of food crop production. Farming systems where labor is already scarce, overall or on a seasonal basis, will be most vulnerable.
- **Health care.** HIV/AIDS-related illnesses are swamping hospital beds and budgets in all countries in the region. Home care systems are being developed, but they require external resources, which continue to be scarce.
- **School Enrollment.** Increases in HIV/AIDS-related illness and death will likely cause a decline in school attendance as declining household incomes put pressure on children to help meet the need for labor and income. A World Bank study in Tanzania suggested that HIV/AIDS may reduce the number of primary schoolchildren by 22 percent and secondary schoolchildren by 14 percent as a result of increased infant and child mortality as well as lower attendance. HIV/AIDS also will reduce the number of teachers available, just as it will reduce the number of skilled workers in other sectors.

THE IMPACT OF HIV/AIDS ON CHILDREN

The demographic effect of HIV/AIDS that has received the most attention is the increase in the number of orphans — perhaps because of our natural sympathies for the suffering of children. Increased numbers of orphaned children certainly will be the most visible demographic shift caused by the pandemic.

In many of the Sub-Saharan African countries included here, the HIV/AIDS pandemic began early and is now severe, with seroprevalence rates in some urban areas above 30 percent. Because of its severity, the epidemic has been closely monitored in these countries, which include Botswana, Kenya, Malawi, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe. In Sub-Saharan Africa, the epidemic is expected to peak before 2010, and orphan populations will peak seven to ten years later. This means that orphan populations are projected to increase in Sub-Saharan Africa through at least 2010. However, the Asian countries that are most seriously affected by HIV/AIDS are home to over 20 percent of the world's population, and so it is likely that by 2020 the largest number of HIV/AIDS orphans will be in South and South East Asia. Unfortunately, data is unavailable to make accurate projections of the number of HIV/AIDS orphans in most Asian countries where epidemic impact is likely to be severe, including India, Burma, Cambodia, and

THE IMPACT OF HIV/AIDS ON CHILDREN

Loss of family and identity
Psychosocial distress
Increased malnutrition
Loss of health care, including immunization
Increased demands for labor
Fewer opportunities for schooling and education
Loss of inheritance
Forced migration
Homelessness, vagrancy, starvation, crime
Exposure to HIV infection

Vietnam. This underscores the importance of developing effective interventions in Sub-Saharan Africa that can be applied when the problem of HIV/AIDS orphans becomes severe in Asia and other areas of the world.

Yet, the problems children face as a result of HIV/AIDS begin long before their parents die, because they live with sick relatives in households stressed by the

drain on their resources. In countries with only moderately severe HIV-infection rates,

up to 25 percent of children born to healthy women may have at least one parent infected with HIV by their fifth birthdays.⁶

Children in households affected by HIV/AIDS face loss of their family and their identity, psychosocial distress, increased malnutrition, loss of health care (including immunization), increased demands for labor, reduced opportunities for schooling and education, the loss of their inheritance, forced migration, homelessness, and exposure to HIV infection.

In estimating the total number of children orphaned by AIDS, the Census Bureau subtracts the number of children born HIV-positive — some 39 percent of children born to HIV-positive mothers. In Sub-Saharan Africa, most HIV-positive children die before their second birthdays. They live longer in other parts of the world, due to better nutrition and health care.

Unfortunately, there is no good methodology for estimating the number of HIV-positive children. We do know, however, that for every 10 orphans who survive to age 15, there are three or four children infected with HIV who die much sooner. These children are often quite sickly and require special care and attention from their mothers, their families, and the health care system. Information, education, and communications campaigns can be used to help mothers understand that not all of their children are necessarily HIV-positive so that they seek appropriate medical attention and immunization for HIV-negative children.

⁶ A. Palloni and Y.J. Lee, "Some Aspects of the Social Context of HIV and Its Effects on Women, Children and Families," Population Bulletin of the United Nations, Number 33, p. 82.

Governments and relief agencies need to know more about these children — who they are, where they live, who is taking care of them, and what can be done to help them. We need this knowledge for their benefit and for our own. Not only do these children deserve our humanitarian concern, but the potential social impact of their presence in large numbers demands our immediate attention. The presence of large numbers of undereducated, impoverished, and less-than-healthy children in underdeveloped social structures may have negative effects on social organizations and societal stability.

HIV/AIDS causes serious problems for children. But singling out for assistance those children whose parents have died of AIDS stigmatizes the intended beneficiaries. The needs of individual children are not necessarily greater than those of children orphaned by other causes or vulnerable for other reasons, and the problems may begin long before their parents become ill or die from HIV/AIDS. Because of increased economic stress on households, many children who are not themselves orphans also will experience these problems.

For these reasons, interventions should be targeted in two stages. They should be directed to the communities where the impact of HIV/AIDS is greatest and where it significantly affects the ability of families to meet their children's needs. Within these communities, assistance should be targeted to the children and families identified by residents as the most vulnerable (without making HIV/AIDS a criterion).

THE IMPACT OF HIV/AIDS ON FAMILIES

The problems caused by HIV/AIDS are shared by all members of the household. The locus of care for HIV/AIDS patients is the family because of poverty or a lack of access to institutional care, personal preference, and cultural norms. Changes in family composition and increased poverty limit the ability of many families to provide care for sick family members. Most HIV/AIDS patients now care for themselves or are assisted by female relatives.

Households often cannot afford even basic medicines to treat opportunistic infections or to make patients more comfortable. The demands of caring for sick family members may lead caretakers to neglect their own needs or those of others in the household. Caretakers can benefit from the support of members of their extended families or communities and from counseling to address the stigma, isolation, and uncertainty they often feel about the future.

HIV/AIDS places new demands on family resources and reduces the time adults can spend on income-generating activities or subsistence agriculture. Medicines,

treatments, and other care often consume a significant share of the family income. When HIV infection results in illness, adult family members are less able to care for children and the elderly. The demands for children's labor for domestic chores, income-generating work, or care for an ailing parent increase. Girls often face pressure to marry at younger ages. Households with HIV/AIDS typically spend a full year's income meeting treatment and funeral costs. Many families are impoverished by HIV/AIDS, particularly those with little savings or reserves. Female-headed households are especially vulnerable.

THE IMPACT OF HIV/AIDS ON FAMILIES

- Loss of family members (death, fostering, adoption)
- Changes in household and family structure
- Family dissolution
- Lost income
- Impoverishment
- Lost labor
- Forced migration
- Grief
- Stress
- Reduced ability to care for children and elderly household members

Labor-intensive, small-holder farms generally decline as a result of HIV/AIDS because it reduces the quality and quantity of household labor and limits the amount of disposable income available for farm inputs. HIV/AIDS deaths may result in changes in land ownership and utilization, food- and cash-cropping patterns, reduced food stores, and the sale of livestock holdings. The overall result may be diminished nutrition for adults and children.

HIV/AIDS causes the dissolution of households. Children may be fostered or adopted prior to the death of a parent. Orphans are cared for by grandparents, uncles, aunts, or siblings. Female orphans are often preferred for adoption over male orphans because they can provide domestic labor, sexual diversion, and, in many countries, a bride price.

Children's psychosocial distress begins with a parent's illness, and they are left emotionally and physically vulnerable by the death of one or both parents. They may suffer lingering emotional problems from attending to dying parents and seeing their parents die. Orphans are more likely to be removed from school because of the loss of household income and labor. They experience higher morbidity and mortality and decreased nutrition. Children under age 2 who lose their mothers are most likely to suffer additional morbidity and mortality.

AIDS deaths lead to a redistribution of household assets, often with the disenfranchisement of women and children. (However, redistribution according to customary law that favors relatives of the male head of household is sometimes blocked by family members or the community, which indicates a considerable

change in attitudes and beliefs.) Widows may have difficulty remarrying or find potential husbands reluctant to assume responsibility for their children.

HIV/AIDS also affects the nature of households. There is an increase in multi-generational households without the middle (income-generating) generation. There is an increase in female-headed households that have little access to family or external resources. The roles of family members change. Children may care for ill adults and work to produce food and generate income. Children also are marrying younger. With increased mortality among adults, older people will provide more care for children and the ill. This burden will fall disproportionately on elderly women, who are not only burdened with care of the young, but also experience economic setbacks because of loss of support of their children.

The proportion of households with orphans, already substantial, will increase. A study by the Zambian Ministry of Health estimated that 40 percent of households in the country have one or more orphans and that 16 percent of households are headed by widows. The 1995 Ugandan DHS found that 25 percent of all households included foster children under age 15.

HIV/AIDS often causes urban-to-rural migration, the opposite of regular patterns. Illness forces some people to seek care or support from extended families in rural areas. Also, orphaned children are often sent to live with relatives in a parent's home village. Other people leave cities because they are afraid of contracting HIV/AIDS in urban settings.

The changes experienced by children, families, and communities vary around the world. In Africa, despite their poverty, children benefit from broad support mechanisms that may provide a stronger safety net than in other regions. These include multigenerational families, single mothers living in sub-households, customs for exchanging children among kin, and the sharing of child support and child rearing. Many of these patterns and customs differ in Asia or Latin America.

THE IMPACT OF HIV/AIDS ON COMMUNITIES

The vulnerabilities of children, families, and communities are compounded by the geographic concentration of the pandemic. Vulnerable children are cared for by vulnerable families and reside in vulnerable communities. Many communities hardest hit by HIV/AIDS are already severely disadvantaged, with high poverty,

THE IMPACT OF HIV/AIDS ON COMMUNITIES

The labor pool is reduced, particularly for agricultural labor and for skilled labor, including health workers and teachers.

Poverty increases.

Infrastructure deteriorates.

Access to health care and education is reduced.

Mortality is elevated.

The community has fewer resources to marshal for mutual aid.

Communities suffer a general loss of resilience.

poor infrastructure, and little or no access to even the most rudimentary services. In fact, communities with the highest infection rates are often the most impoverished and marginal because these are the conditions conducive to rapid HIV transmission.

The vulnerability of a particular community can be measured along a number of dimensions, including HIV/ AIDS prevalence; the existing orphan burden; the community's economic strength, including the availability of employment and subsistence food production; and the level of infrastructure, especially the availability

of health and education services. HIV/AIDS stresses communities in a variety of ways. There may be reductions in the labor pool, particularly for agricultural and skilled labor, increased poverty, a reduced ability to maintain infrastructure, reduced access to health care and education, elevated mortality, fewer resources to be marshalled for mutual aid, and a general loss of resilience.

COMMUNITY-BASED RESPONSES TO HIV/AIDS

In many areas, communities have joined together spontaneously to support and assist families and children affected by HIV/AIDS. Left on their own, with no external assistance, some communities have devised identification and assistance programs of varying sophistication to help needy children and families in their midst. The paradox is that community-based responses may be the most cost-effective interventions while being the least visible.

Many of the community-based programs to assist those affected by HIV/AIDS are developed and run by community-based organizations, or CBOs. These organizations are generally democratic, representing the interests of their members and accountable to them. They are formed as a response to shared experiences, and they generally do not rely on outside sources for funding. They are usually local but can spread and grow into networks of grassroots organizations.

In 1993, the United Nations Development Program (UNDP) estimated that there were at least 100,000 CBOs worldwide. These groups form a powerful constituency for governments, nongovernmental organizations (NGOs), and donors.

Many of the communities hardest hit by HIV/AIDS have fashioned similar responses to increased illness and death from HIV/AIDS and the resulting needs of families and children, including the following:

- Systems to enumerate and assess the needs of families and children to determine the extent of problems, to raise awareness, and to promote informed decision-making
- Targeting assistance to families and children most in need
- Monitoring systems, which are often ad hoc, to maintain contact with children, supervise their activities, and prevent child labor abuses
- Voluntary labor sharing for a variety of purposes, including:
 - cooperative daycare and nutrition centers to free women burdened with HIV/AIDS patients and additional foster children to work in or outside the home
 - agricultural projects at various levels to increase output
 - income-generating projects to produce food and cash
 - repair of deteriorating houses
 - home care and visitation of orphans and HIV/AIDS patients
 - preparation and distribution of school uniforms
 - Credit schemes for funeral benefits or income-generating projects
- Efforts to protect the property and inheritances of widows and children from being appropriated by the family of a deceased spouse
- Apprenticeships to teach orphaned adolescents marketable skills
- Efforts to change local laws and practices that burden needy families and children, such as restrictions on and fees for school and health services.

Supporting the most vulnerable children and families

SHARED ELEMENTS OF COMMUNITY BASED INTERVENTIONS

<p>Savings and credit schemes</p> <p>Protection of property and inheritance rights of widows and children</p> <p>Vocational training</p> <p>Changes in local laws and practices</p>

HELPING CHILDREN, FAMILIES, AND COMMUNITIES AFFECTED BY HIV/AIDS

It is impossible to overemphasize or exaggerate the scope and complexity of the challenges faced by children affected by HIV/AIDS and by the families, communities, and governments responsible for their well-being. The coordination, effectiveness, and impact of HIV/AIDS programs must be improved. Appropriate programs must be effective, cost-effective, and sustainable over the long term.

Fundamental Priorities

Four fundamental priorities should guide responses to the needs of these children.

- **Urgency:** The problems of children affected by HIV/AIDS are not new, but they have taken on a new urgency. The number of orphans has grown since HIV began to spread in the 1970s, and they now demand our immediate attention. Some 30 million children have already lost one or both parents to all causes, including AIDS, in the 23 study countries included in this report. The numbers of orphans will swell in the near future as the epidemic grows in Asia and in Latin America and the Caribbean. In short, the estimates for the 23 countries in this study, as large as they are, reflect only a portion of the total number of children affected by HIV/AIDS worldwide. Solutions have been developed — especially by the families and communities most affected — but these need to be strengthened, expanded, and combined to adequately address the current and future needs of these children.
- **Realism:** The estimates in this report of the number of HIV/AIDS orphans give us a perspective on the gravity and enormity of the challenge we face. We must be realistic about the feasibility of different types of interventions to assist those affected by HIV/AIDS. Scarce resources cannot be used to develop costly institutional programs or direct interventions by nongovernmental organizations (NGOs). The resources available must immediately be devoted to building on the innovative and effective approaches being developed by affected communities themselves. These are the only interventions that will be sustainable over the long term, both financially and morally.
- **Scale:** Intervention programs must be quickly brought to scale to achieve national coverage. This is no longer a luxury but a necessity. Doing this will require dramatic initiatives. The principal requirement is strong and visionary national leadership. National leaders must develop alternative resources to finance such programs, including community and voluntary resources and donor financing. They also must be committed to policy interventions that

increase the rights of women and children, improve their ability to support themselves and obtain a reasonable education, and protect their earnings and investments through equitable property ownership and inheritance laws.

Most responses to children and families affected by HIV/AIDS have been far too limited in scope and scale. Governments, donors, NGOs, and others must coordinate their efforts to address the large and growing problems that exist. A strategic, coordinated response at scale requires programs that are:

- targeted to the most vulnerable areas, communities, and population groups
 - targeted by each community to the most vulnerable children and households
 - effective in reducing the vulnerability of orphans and other affected children
 - sustainable, with a low cost per beneficiary
 - integrated or coordinated with existing services and development initiatives.
- ***Appropriate Roles:*** In going to scale to achieve national coverage, resources will be spread thin, and those involved must assume appropriate and cost-effective roles. There must be a hierarchy of responsibilities among key actors to improve the efficacy and cost-effectiveness of programs. International organizations and donors should provide and coordinate resources and serve as a resource to governments. They can identify appropriate community-based responses, evaluate their effectiveness, and share the lessons learned. National governments should provide leadership and develop national strategies that target resources to the most needy, integrate interventions with existing services, facilitate information-gathering and -sharing, and generally improve the welfare of children and families. Communities should identify and monitor vulnerable children and families and develop and implement programs to assist them. NGOs should help communities expand their capacities to address the needs of their members by helping them to strengthen their response mechanisms and to identify and generate additional resources.

Strategies for Intervention

The first and most important responses to the problems caused by HIV/AIDS comes from the affected children, families, and communities themselves. The efforts of governments, nongovernmental organizations, and donors are significant

largely to the extent that they help children, families, and communities cope more easily with these problems.

Recent experience suggests that six basic intervention strategies can help governments, NGOs, and donors to target their efforts.

**INTERVENTION STRATEGIES TO ASSIST
CHILDREN, FAMILIES, AND COMMUNITIES
AFFECTED BY HIV/AIDS**

1. Strengthen the capacity of families to cope with their problems.
2. Stimulate and strengthen community-based responses.
3. Ensure that governments protect the most vulnerable children and families.
4. Build the capacities of children to support themselves.
5. Create an enabling environment for affected children and families.
6. Monitor the impact of HIV/AIDS on children and families.

1. Strengthen the capacity of families to cope with their problems.

When a household begins to feel the effects of HIV/AIDS, extended family relationships are its first safety net. Although families are under great stress, the extended family has *not* collapsed under the weight of the HIV/AIDS pandemic. Most families are still providing some level of care for the overwhelming majority of affected children. Even in the most severely affected countries, the vast majority of orphans are living within their extended family networks. Typically, less than 1 percent of orphans live on the street, in institutions, or in households headed by children.

STRENGTHENING THE CAPACITY OF FAMILIES TO COPE WITH THEIR PROBLEMS

- Improve infrastructure
- Provide access to credit
- Increase their ability to generate income
- Reduce demands on their labor
- Protect women's and children's property and other legal rights
- Ensure access to health services
- Respond to their psychosocial needs

However, the customs and reality of caregiving for HIV/AIDS and trends in family structure in developing countries combine to place the greatest stress and responsibility on females in the family, both adults and children. Action is needed to empower women and maximize their access to economic resources. In many of these countries, women have few legal rights — for example, they may be unable to own or inherit property or to hold a job without a man's permission. In addition, building basic infrastructure that reduces the demands on women's labor can significantly alleviate their vulnerability.

Many of the problems faced by households affected by HIV/AIDS are fundamentally economic. These households are generally struggling to make ends meet and suffer setbacks when a member is sick with HIV/AIDS, when a sick member dies, or when they take in orphans. Arranging access to formal or informal credit mechanisms or ways to generate additional earning capacity can help families overcome such setbacks. In addition, reducing the demands on household members' labor can free them to undertake other productive activities. This might involve, for example, supporting community-based child care, extending piped water to villages, or enabling artisans to produce fuel-efficient stoves to reduce the time required to collect firewood.

Reducing “property grabbing” by protecting women's and children's property and inheritance rights can reduce the vulnerability of survivors. This can be done, for example, by informing HIV-infected parents and women about laws that can protect their inheritance rights, by helping people to prepare written wills, by supporting legal services for widows and orphans to help them regain property, and by sensitizing traditional leaders about the need to protect widows' and orphans' property rights through traditional law and customs.

Support for home-based care of HIV/AIDS patients is an important way to strengthen families' capacity to cope. Family members learn to provide more ade-

quately for the needs and comfort of those who are ill. This is also an opportunity to provide psychosocial support to those who are ill and their family members.

Measures should be taken to reduce the health risks to children in households affected by HIV/AIDS. These may include developing home-based health services, supporting child nutrition programs, making special efforts to include these children in immunization programs and other health outreach efforts, incorporating training about HIV prevention into programs that reach all children (i.e., in school) and that target especially vulnerable children (e.g., street children), and improving access to safe water.

Protracted illness and the eventual death of parents have profound psychosocial effects on children, but these receive less attention than the more visible problems they face. Most measures to address psychosocial needs among children affected by HIV/AIDS do not require separate new programs but can be incorporated into school, health, and other activities. Approaches include helping infected parents play normal parental and social roles and giving children opportunities to talk about their fears.

In addition to physical and material support, a vitally important aspect of strengthening family coping capacities is providing emotional support and encouragement. Friends, neighbors, families, members of the families' religious communities, or cooperative associations can help build a sense of hope and possibility through periodic visits. This can also be an important component of outreach programs that support home-based care.

2. Stimulate and strengthen community-based responses.

For children whose families cannot adequately provide for their basic needs, the community is the second safety net. The types of spontaneous, community-based interventions discussed previously can help support families under great stress to care for their children. They can also help vulnerable children directly. Such efforts may involve helping communities identify problems among vulnerable children and families and ways to support them, encouraging leaders to protect the property and inheritance rights of widows and orphans, organizing cooperative child care or labor support, training community members to assess needs and provide support, organizing orphan-visiting programs, or providing material or financial resources.

STIMULATING AND STRENGTHENING COMMUNITY-BASED RESPONSES

- Respect community decision-making
- Enhance the community's ability to support vulnerable families
- Organize orphan-visiting programs
- Protect women's and children's property rights
- Provide training
- Organize cooperative day care and labor support

The most vulnerable children and families are the least able to make their needs known. An active effort is required to identify them and to mobilize local resources to respond to their most urgent needs. Assisting communities in developing and implementing assistance programs involves respecting communities' decision-making structures and enhancing communities' ability to target assistance to vulnerable families.

3. Ensure that governments protect the most vulnerable children and provide essential services.

The most vulnerable children are those who fall through both safety nets. They need a third line of response. Under national law and the United Nations Convention on the Rights of the Child, national governments have the ultimate responsibility to ensure that children are protected and cared for if they are on their own or if those with whom they live are unable or unwilling to care for them adequately.

This requires governments to intervene to protect abused or neglected children. Children who lose both parents are especially vulnerable. Many foster families provide the best care they can, but some have exploited or abused orphans they have taken in.

Governments also have a responsibility to provide services on many levels that improve the welfare of children, including ensuring access to safe water and health services, enabling all children to attend school, and empowering families to support themselves economically.

Adoption and foster care mechanisms are needed to help children who require special placement. Building these mechanisms involves strengthening and expanding governmental or NGO programs, supporting measures to ensure rapid placement of abandoned infants, and, where institutional care exists, supporting screening procedures to ensure that children are placed in institutional care only when no better placement options are possible, that such care meets appropriate standards, and that institutional care is used on an interim basis until a family placement can be made.

ENSURING THAT GOVERNMENTS PROTECT THE MOST VULNERABLE CHILDREN AND PROVIDE ESSENTIAL SERVICES

Intervene to protect abused or neglected children

Build adoption and foster care mechanisms

Protect children's property rights

Protecting children's property rights can reduce their vulnerability. Nonetheless, many children orphaned by AIDS have to work to survive, and they often find themselves in harmful or abusive situations. Measures that can benefit children

who must work include sensitizing police to the situation of children who work on the street and to any laws that protect them; promoting enforcement of child labor laws; providing less harmful ways for children to earn income; and working with employers to improve children's work conditions, shelter, education, and training.

4. Build the capacities of children to support themselves.

Orphans often must support themselves and their younger siblings earlier than other children. HIV/AIDS catches children in a double bind. At a point where children face a premature need for education and training that will help them support themselves, economic pressures and the need to replace lost adult labor often force them to drop out of school. Girls are often forced to drop out first, causing long-term losses for the society.

Enabling children to stay in school and to learn vocational skills improves their ability to provide for their own needs, now and in the future. Interventions to help children continue their education must address the specific factors that cause them to drop out. Assistance may be used to pay school expenses or vocational training fees, support apprenticeships with local artisans, construct school facilities in exchange for guaranteed admission of orphans, and develop informal education for part-time students.

BUILDING THE CAPACITIES OF CHILDREN TO SUPPORT THEMSELVES

Enable children to stay in school
Reduce labor demands on households
Protect children from exploitation

It is also important to decrease households' dependence on children's work. These could include initiatives to boost the income-generating capacity of poor households in areas seriously affected by HIV/AIDS. They could also include water, fuel, or other projects that reduce household work requirements, or respite care for people with HIV/AIDS.

Children must also be protected from exploitation and abuse. Vulnerable children need encouragement and support from their extended families, friends, teachers, neighbors, and members of their religious communities.

5. Create an enabling environment for affected children and families.

The significance of efforts by governments, NGOs, donors, religious bodies, and other entities will depend largely on the extent to which they make it easier for children, families, and communities to cope with the effects of HIV/AIDS. In addition to the strategies for direct intervention described above, all parties must

work together toward the overarching goal of creating an enabling environment for those affected.

Policymakers, community leaders, journalists, employers, and the public at large must develop an increased understanding of the problems facing children affected by HIV/AIDS and a stronger commitment to address those problems. This can be done through conferences, efforts to attract media attention to the issues, and public information campaigns about the impact of HIV/AIDS and about how some communities are responding.

CREATING AN ENABLING ENVIRONMENT FOR AFFECTED CHILDREN AND FAMILIES

Promote increased understanding and commitment

Reduce stigma and discrimination

Advocate and implement laws and policies that protect the safety and rights of affected children and families

Improve the coordination, effectiveness, and impact of programs

Mobilize and allocate appropriate and sufficient financial resources

Stigma and discrimination impede efforts to prevent the spread of HIV/AIDS, to improve care and support of those with HIV/AIDS, and to reduce the effects on their family members. The process of reducing stigma and discrimination is largely one of reducing fear, ensuring basic legal protection, and transforming the public perception of HIV/AIDS from “their problem” to “our problem.” Providing information and challenging myths can help reduce fear. Laws to protect the rights of those with HIV and their families regarding health services, employment, housing, and schools can directly enhance their ability to cope.

In some countries, public attitudes have changed when political leaders and popular public figures have spoken out openly on HIV/AIDS. Some religious bodies have established ongoing programs to promote awareness and compassionate action.

The coordination, effectiveness, and impact of programs must be improved. Appropriate programs generally meet three criteria. They are effective, making a significant impact on priority problems. They are cost-effective, with a reasonable cost per beneficiary. And they are sustainable over the long term.

Several mechanisms can be instituted to improve coordination and increase the effectiveness of intervention programs. One is to establish a regular forum for key actors to come together regularly to share information, coordinate activities, and build partnerships. Another is to clearly define roles for governmental and nongovernmental actors. A third is to develop policies that define strategic approaches, programming priorities, and geographic responsibilities.

Sufficient financial resources must be mobilized and allocated to support essential policies and priorities. In many Sub-Saharan African countries, responsibility for children's welfare is often assigned to the most understaffed and underfunded government agencies. Resource-strapped governments also rely on funding and assistance from donors and NGOs to provide many health, educational, and social services. Collaboration among these agencies and organizations is essential to improving the effectiveness and sustainability of community-based responses to HIV/AIDS. Such collaboration can create an environment that ensures and improves the welfare of children and families. It can also help ensure that program interventions are cost-effective and sustainable.

The private sector's commitment to respond also should be nurtured. Many countries have work-site HIV/AIDS prevention programs with nascent care components. In some countries, concerned employers are developing survivor support programs which include health, education, and vocational training. Private philanthropy also can be a source of support for local programs.

Laws and policies should be changed, where necessary, to reduce the vulnerability of children and families. At a minimum, laws and governmental policies and activities should promote women's and children's rights and status, allow women to own land and hold jobs, encourage men to take responsibility for and contribute to the support of their families, support increased NGO activity and coordination, increase multi-sectoral responses to HIV/AIDS, encourage private sector investment in HIV/AIDS prevention and care, and redirect national investment to improve health care and educational opportunities for those affected by HIV/AIDS.

6. Monitor the Impact of HIV/AIDS on Children and Families

Because an HIV/AIDS epidemic is constantly evolving, monitoring its effects provides essential information to guide policy and program development. Systems that regularly collect and disseminate information on the health and socioeconomic impact of HIV/AIDS on families and children are particularly important.

Accurate information is essential for targeting assistance to children in the most seriously affected areas. There is a need to enhance mechanisms for collecting and analyzing data on the impact of HIV/AIDS on children, families, and communities; their coping strategies; the factors that contribute to the spread of HIV/AIDS; and existing programs and services. Estimates and projections of the number of orphans are particularly valuable.

MONITORING THE IMPACT OF HIV/AIDS ON CHILDREN AND FAMILIES

Collect and disseminate information on the health and socioeconomic impact on children, families, and communities

Enhance mechanisms for collecting data

Estimate and project the number of orphans

Involve community members in data collection

Update data regularly to reflect the evolving nature of the epidemic and the impact of interventions

When community members assist in collecting such data, they become more familiar with the scale and nature of the problems created by HIV/AIDS and are usually motivated to take charge and find solutions.

This data must be updated regularly to reflect the changing face of the epidemic and the impact of interventions.

ACTION STEPS

Governments must undertake a series of steps to assist families, children, and communities affected by HIV/AIDS. Active community participation is essential for any program to be effective in addressing the needs of the most vulnerable children and families and for it to obtain international support.

In addition to undertaking interventions in the six strategic areas outlined above, governments must mobilize and coordinate resources for an effective response. Given the magnitude of the problems created by HIV/AIDS, even relatively low-cost interventions will require significant resources to be implemented at scale. Collaboration among governments, donors, and international organizations is essential to ensure that resources are mobilized and directed to the most cost-effective interventions in a coordinated way.

These efforts could be focused on collecting and analyzing critical information, including the costs of interventions, numbers and types of orphans and children affected by HIV/AIDS, and children's and women's rights. A special effort will be needed to gather this type of information on the impact of HIV/AIDS in Asian countries, including India and Bangladesh, in order to anticipate the extent of orphaning as soon as possible.

Individual children, families, and communities have been principally responsible for caring for individuals and families affected by HIV/AIDS. They have been affirmative in their responses and have developed low-cost models that can be emulated. Communities will flourish even while facing the challenges of this pandemic if they are supported and enabled by the institutions that condition their environment — the most important of which is government.

International organizations, donors, and NGOs can assist governments in ensuring that policies and infrastructure are in place to support community interventions and innovations. If we are serious about considering communities as partners, then we must understand and value their contributions and innovations. Community-based interventions are investments that can be leveraged with properly targeted funds.

Annex A. Statistical Tables

Figure A-1.

The Demographic Impact of AIDS Epidemic on the 23 Study Countries, 2010

Country	Total Population (millions)	Population Loss to AIDS (millions)	Population Growth Rate (%)	Life Expectancy (years)	Infant Mortality (deaths < age 1 per 1000)	Child Mortality (deaths < age 5 per 1000)	Fertility Rate (number of births per 1000)
East Africa							
Burundi	8.2	0.8	2.3	44.9	80.4	130.8	5.3
Ethiopia	81.2	5.8	2.2	43.8	105.7	165.6	5.9
Kenya	33.9	5.2	0.5	43.2	55.9	110.3	2.6
Rwanda	10.1	2.7	0.9	32.7	107.6	193.4	5.0
Tanzania	36.1	7.8	1.1	36.5	90.9	166.1	4.4
Uganda	26.4	6.3	1.6	35.2	86.1	168.1	5.2
Southern Africa							
Botswana	1.6	0.5	-0.4	33.4	66.1	147.5	2.9
Lesotho	2.4	0.3	1.2	49.4	65.7	107.5	3.1
Malawi	10.7	3.4	0.1	29.5	126.1	233.8	3.9
South Africa	49.2	4.4	0.7	47.8	47.3	86.3	2.6
Zambia	11.5	4.2	1.2	30.3	97.4	202.1	5.4
Zimbabwe	11.9	4.5	-0.5	33.1	71.0	152.9	2.4
West and Central Africa							
Burkina Faso	14.2	3.0	1.6	35.2	101.9	184.3	5.4
Cameroon	20.6	1.6	2.4	48.9	64.5	110.6	5.0
Central African Republic	4.2	0.7	1.4	39.9	92.5	156.1	4.4
Congo	3.3	.5	1.6	46.8	80.4	133.7	4.0
Côte d'Ivoire	20.3	3.2	2.1	44.8	65.4	118.7	4.9
Dem. Republic of Congo*	69.3	5.3	2.9	51.3	77.9	118.7	5.6
Nigeria	157.4	4.6	2.8	59.7	45.1	79.2	5.1
Non-African							
Brazil	183.7	9.8	0.7	65.1	31.5	43.9	1.9
Guyana	.7	.0	-0.8	49.1	51.7	92.0	1.9
Haiti	8.7	.5	1.9	52.5	85.6	134.4	3.9
Thailand	66.1	1.1	0.6	72.9	18.7	25.0	1.8
*formerly Zaire Source: U.S. Bureau of the Census, June 1996.							

Figure A-2. Orphan Estimates for the 23 Study Countries, 1990

Country	Population of children <age 15	Maternal and double orphans ¹ from all causes	Maternal/ double orphans as % of children <age 15	% of maternal/ double orphans from AIDS	Paternal orphans ² from all causes ³	Paternal orphans as % of children < age 15	Total orphans from all causes	Total orphans as % of children <age 15
East African Countries								
Burundi	2,606,360	135,227	5.19%	7.20%	251,136	9.64%	386,363	14.82%
Ethiopia	21,809,882	1,222,619	5.61%	4.10%	2,270,578	10.41%	3,493,197	16.02%
Kenya	11,596,696	278,576	2.40%	15.20%	517,359	4.46%	795,937	6.86%
Rwanda	3,490,782	188,576	5.40%	28.30%	350,213	10.03%	538,789	15.43%
Tanzania	11,524,229	616,348	5.35%	30.60%	1,144,646	9.93%	1,760,994	15.28%
Uganda	8,240,715	583,278	7.08%	35.40%	1,083,231	13.14%	1,666,509	20.22%
Southern African Countries								
Botswana	577,484	25,159	4.36%	20.60%	46,724	8.09%	71,883	12.45%
Lesotho	739,277	27,951	3.78%	36.10%	51,909	7.02%	79,860	10.80%
Malawi	4,283,697	259,208	6.05%	31.20%	481,386	11.24%	740,594	17.29%
South Africa	13,769,200	362,026	2.63%	13.80%	672,334	4.88%	1,034,360	7.51%
Zambia	3,985,464	311,045	7.80%	51.80%	577,655	14.49%	888,700	22.30%
Zimbabwe	4,797,706	275,572	5.74%	61.20%	511,777	10.67%	787,349	16.41%
West and Central African Countries								
Burkina Faso	4,297,732	201,211	4.68%	23.50%	373,676	8.69%	574,889	13.38%
Cameroon	5,489,074	215,104	3.92%	10.20%	399,479	7.28%	614,583	11.20%
Central African Republic	1,244,113	73,600	5.92%	17.70%	136,686	10.99%	210,286	16.90%
Congo	975,333	50,250	5.15%	45.60%	93,321	9.57%	143,571	14.72%

Figure A-2. Orphan Estimates for the 23 Study Countries, 1990

Côte d'Ivoire	5,710,805	347,000	6.08%	36.20%	644,429	11.28%	991,429	17.36%
Dem. Republic of Congo ⁴	17,985,115	1,119,184	6.22%	27.40%	2,078,485	11.56%	3,197,669	17.78%
Nigeria	38,839,699	1,391,800	3.58%	6.60%	2,584,771	6.65%	3,976,571	10.24%
Total, 19 African Countries	161,963,363	7,683,736	4.74%	21.55%	14,269,795	8.81%	21,953,531	13.55%
Non-African Countries								
Brazil	51,674,459	794,121	1.54%	27.30%	1,191,182	2.31%	1,985,303	3.84%
Guyana	272,722	3,636	1.33%	8.10%	5,454	2.00%	9,090	3.33%
Haiti	2,717,689	152,391	5.61%	29.90%	228,587	8.41%	380,978	14.02%
Thailand	16,223,391	150,448	0.93%	0.10%	225,672	1.39%	376,120	2.32%
Total, Non-African Countries	70,888,261	1,100,596	1.55%	5.96%	1,650,894	2.33%	2,751,490	3.88%
Total, 23 Study Countries	232,851,624	8,784,332	3.77%	19.90%	15,920,689	6.84%	24,705,021	10.61%
<p>1. Maternal orphans: children who have lost their mothers; double orphans: children who have lost both parents</p> <p>2. Paternal orphans: children who have lost their fathers</p> <p>3. A ratio of 35 percent to 65 percent paternal was used to expand the Census Bureau estimates of maternal orphans for 1995.</p> <p>4. formerly Zaire</p> <p>Source:</p> <p>Shaded columns = U.S. Bureau of the Census</p> <p>Unshaded columns = S. Hunter, 1997(developed using Census Bureau estimates, African censuses, and research studies).</p>								

Figure A-3. Orphan Estimates for the 23 Study Countries, 1995

Country	Population of children <age 15	Maternal and double orphans ¹ from all causes	Maternal/ double orphans as % of children < age 15	% of maternal/ double orphans from AIDS	Paternal orphans ² from all causes ³	Paternal orphans as % of children <age 15	Total orphans from all causes	Total orphans as % of children under age 15
East African Countries								
Burundi	2,799,174	171,544	6.13%	20.00%	257,316	9.19%	428,860	15.32%
Ethiopia	25,435,992	1,569,246	6.17%	13.00%	2,353,869	9.25%	3,923,115	15.42%
Kenya	12,534,339	431,222	3.44%	39.90%	646,833	5.16%	1,078,055	8.60%
Rwanda	2,786,646	306,947	11.01%	39.60%	460,421	16.52%	767,368	27.54%
Tanzania	12,956,020	939,196	7.25%	49.00%	1,408,794	10.87%	2,347,990	18.12%
Uganda	9,728,932	898,628	9.24%	52.70%	1,347,942	13.85%	2,246,570	23.09%
Southern African Countries								
Botswana	620,701	40,899	6.59%	46.50%	61,349	9.88%	102,248	16.47%
Lesotho	798,619	41,229	5.16%	52.20%	61,844	7.74%	103,073	12.91%
Malawi	4,375,725	392,283	8.96%	51.40%	588,425	13.45%	980,708	22.41%
South Africa	14,825,130	535,343	3.61%	36.40%	803,015	5.42%	1,338,358	9.03%
Zambia	4,427,944	514,104	11.61%	67.50%	771,156	17.42%	1,285,260	29.03%
Zimbabwe	5,017,911	455,359	9.07%	75.30%	683,039	13.61%	1,138,398	22.69%
West and Central African Countries								
Burkina Faso	4,972,605	323,161	6.50%	46.50%	484,742	9.75%	807,903	16.25%
Cameroon	6,380,414	292,142	4.58%	25.70%	438,213	6.87%	730,355	11.45%
Central African Republic	1,418,257	103,546	7.30%	34.80%	155,319	10.95%	258,865	18.25%
Congo	1,080,474	72,411	6.70%	57.60%	108,617	10.05%	181,028	16.75%
Côte d'Ivoire	6,812,588	505,341	7.42%	50.70%	758,012	11.13%	1,263,353	18.54%

Figure A-3. Orphan Estimates for the 23 Study Countries, 1995

Dem. Republic of Congo ⁴	21,718,405	1,523,556	7.02%	38.60%	2,285,334	10.52%	3,808,890	17.54%
Nigeria	45,343,708	1,676,601	3.70%	13.50%	2,514,902	5.55%	4,191,503	9.24%
Total, 19 African Countries	184,033,584	10,792,758	5.86%	36.75%	16,189,137	8.80%	26,981,895	14.66%
Non-African Countries								
Brazil	50,158,328	955,642	1.91%	34.50%	1,433,463	2.86%	2,389,105	4.76%
Guyana	240,565	4,805	2.00%	26.10%	7,208	3.00%	12,013	4.99%
Haiti	3,050,093	189,313	6.21%	38.20%	283,970	9.31%	473,283	15.52%
Thailand	15,172,445	173,822	1.15%	7.10%	260,733	1.72%	434,555	2.86%
Total, Non-African Countries	68,621,431	1,323,582	1.93%	31.40%	1,985,373	2.89%	3,308,955	4.82%
Total, 23 Study Countries	252,655,015	12,116,340	4.80%	36.17%	18,174,510	7.19%	30,290,850	11.99%

1. Maternal orphans: children who have lost their mothers; double orphans: children who have lost both parents

2. **Paternal orphans: children who have lost their fathers**

3. A ratio of 35 percent to 65 percent paternal was used to expand the Census Bureau estimates of maternal orphans for 1995.

4. formerly Zaire

Source:

Shaded columns = U.S. Bureau of the Census

Unshaded columns = S. Hunter, 1997(developed using Census Bureau estimates, African censuses, and research studies).

Figure A-4. Orphan Estimates for the 23 Study Countries, 2000

Country	Population of children <age 15	Maternal and double orphans ¹ from all causes	Maternal/ double orphans as % of children <age 15	% of maternal/ double orphans from AIDS	Paternal orphans ² from all causes ³	Paternal orphans as % of children <age 15	Total orphans from all causes	Total orphans as % of children <age 15
East African Countries								
Burundi	3,011,656	216,455	7.19%	40.70%	264,556	8.78%	481,011	15.97%
Ethiopia	29,179,899	1,997,671	6.85%	28.50%	2,441,598	8.37%	4,439,269	15.21%
Kenya	12,733,972	685,716	5.38%	65.50%	838,097	6.58%	1,523,813	11.97%
Rwanda	3,931,130	475,598	12.10%	56.80%	581,286	14.79%	1,056,884	26.89%
Tanzania	13,806,174	1,349,485	9.77%	65.70%	1,649,371	11.95%	2,998,856	21.72%
Uganda	10,825,573	1,243,361	11.49%	66.70%	1,519,663	14.04%	2,763,024	25.52%
Southern African Countries								
Botswana	641,343	67,455	10.52%	70.60%	82,445	12.86%	149,900	23.37%
Lesotho	834,425	52,921	6.34%	65.00%	64,681	7.75%	117,602	14.09%
Malawi	4,487,572	553,926	12.34%	69.50%	677,021	15.09%	1,230,947	27.43%
South Africa	15,542,260	812,825	5.23%	60.90%	993,453	6.39%	1,806,278	11.62%
Zambia	4,828,272	745,492	15.44%	78.40%	911,157	18.87%	1,656,649	34.31%
Zimbabwe	4,946,183	610,713	12.35%	84.70%	746,427	15.09%	1,357,140	27.44%
West and Central African Countries								
Burkina Faso	5,614,199	526,698	9.38%	67.70%	643,742	11.47%	1,170,440	20.85%
Cameroon	7,303,972	402,488	5.51%	46.30%	491,930	6.74%	894,418	12.25%
Central African Republic	1,543,963	141,228	9.15%	53.90%	172,612	11.18%	313,840	20.33%
Congo	1,164,121	90,295	7.76%	66.50%	110,361	9.48%	200,656	17.24%
Côte d'Ivoire	7,567,279	654,226	8.65%	92.70%	799,610	10.57%	1,453,836	19.21%

Figure A-4. Orphan Estimates for the 23 Study Countries, 2000

Dem. Republic of Congo ⁴	24,774,491	1,759,578	7.10%	45.60%	2,150,595	8.68%	3,910,173	15.78%
Nigeria	52,611,519	1,930,697	3.67%	25.90%	2,359,741	4.49%	4,290,438	8.15%
Total, 19 African Countries	205,348,003	14,316,828	6.97%	52.72%	17,498,345	8.52%	31,815,173	15.49%
Non-African Countries								
Brazil	48,223,745	919,877	1.91%	37.50%	1,124,294	2.33%	2,044,171	4.24%
Guyana	206,236	6,945	3.37%	54.90%	8,488	4.12%	15,433	7.48%
Haiti	3,193,105	189,450	5.93%	42.20%	231,550	7.25%	421,000	13.18%
Thailand	14,351,178	195,947	1.37%	25.90%	239,491	1.67%	435,438	3.03%
Total, Non-African Countries	65,974,264	1,312,219	1.99%	36.54%	1,603,823	2.43%	2,916,042	4.42%
Total, 23 Study Countries	271,322,267	15,629,047	5.76%	51.36%	19,102,169	7.04%	34,731,216	12.80%

1. Maternal orphans: children who have lost their mothers; double orphans: children who have lost both parents
2. Paternal orphans: children who have lost their fathers
3. A ratio of 35 percent to 65 percent paternal was used to expand the Census Bureau estimates of maternal orphans for 1995.
4. formerly Zaire
Source:
Shaded columns = U.S. Bureau of the Census
Unshaded columns = S. Hunter, 1997(developed using Census Bureau estimates, African censuses, and research studies).

Figure A-5. Orphan Estimates for the 23 Study Countries, 2005

Country	Population of children <age 15	Maternal and double orphans ¹ from all causes	Maternal/ double orphans as % of children <age 15	% of maternal/ double orphans from AIDS	Paternal orphans ² from all causes ³	Paternal orphans as % of children <age 15	Total orphans from all causes	Total orphans as % of children <age 15
East African Countries								
Burundi	3,311,859	277,826	8.39%	57.70%	277,826	8.39%	555,652	16.78%
Ethiopia	33,070,855	2,583,857	7.75%	42.60%	2,583,857	7.75%	5,127,714	15.51%
Kenya	12,420,299	986,529	7.94%	79.40%	986,529	7.94%	1,973,058	15.89%
Rwanda	4,002,070	652,531	16.30%	73.20%	652,531	16.30%	1,305,062	32.61%
Tanzania	14,807,982	1,840,713	12.43%	76.70%	1,840,713	12.43%	3,681,426	24.86%
Uganda	11,581,022	1,599,923	13.82%	76.10%	1,599,923	13.82%	3,199,846	27.63%
Southern African Countries								
Botswana	638,013	97,056	15.21%	83.00%	97,056	15.21%	194,112	30.42%
Lesotho	855,683	63,255	7.39%	73.50%	63,255	7.39%	126,510	14.78%
Malawi	4,504,411	714,976	15.87%	79.80%	714,976	15.87%	1,429,952	31.75%
South Africa	15,957,899	1,132,182	7.09%	75.10%	1,132,182	7.09%	2,264,364	14.19%
Zambia	5,136,912	968,786	18.86%	84.50%	968,786	18.86%	1,937,572	37.72%
Zimbabwe	4,649,787	742,779	15.97%	90.40%	742,779	15.97%	1,485,558	31.95%
West and Central African Countries								
Burkina Faso	6,146,227	774,910	12.61%	79.10%	774,910	12.61%	1,549,820	25.22%
Cameroon	8,260,808	532,974	6.45%	60.10%	532,974	6.45%	1,065,948	12.90%
Central African Republic	1,654,062	181,927	11.00%	66.70%	181,927	11.00%	363,854	22.00%
Congo	1,255,983	105,716	8.42%	72.60%	105,716	8.42%	211,432	16.83%
Côte d'Ivoire	8,279,599	816,234	9.86%	19.72%	816,234	9.86%	1,632,468	19.72%

Figure A-5. Orphan Estimates for the 23 Study Countries, 2005

Dem. Republic of Congo ⁴	28,676,849	1,932,156	6.74%	13.48%	1,932,156	6.74%	3,864,312	13.48%
Nigeria	60,775,356	2,195,420	3.61%	7.22%	2,195,420	3.61%	4,390,840	7.22%
Total, 19 African Countries	225,985,676	18,179,750	8.04%	16.09%	18,179,750	8.04%	36,359,500	16.09%
Non-African Countries								
Brazil	46,287,050	814,526	1.76%	3.52%	814,526	1.76%	1,629,052	3.52%
Guyana	183,480	10,233	5.58%	11.15%	10,233	5.58%	20,466	11.15%
Haiti	3,245,119	178,938	5.51%	11.03%	178,938	5.51%	357,876	11.03%
Thailand	14,404,220	218,131	1.51%	3.03%	218,131	1.51%	436,262	3.03%
Total, Non-African Countries	64,119,869	1,221,828	1.91%	3.81%	1,221,828	1.91%	2,443,656	3.81%
Total, 23 Study Countries	290,105,545	19,401,578	6.69%	13.38%	19,401,578	6.69%	38,803,156	13.38%

1. Maternal orphans: children who have lost their mothers; double orphans: children who have lost both parents
2. Paternal orphans: children who have lost their fathers
3. A ratio of 35 percent to 65 percent paternal was used to expand the Census Bureau estimates of maternal orphans for 1995.
4. formerly Zaire
Source:
Shaded columns = U.S. Bureau of the Census
Unshaded columns = S. Hunter, 1997(developed using Census Bureau estimates, African censuses, and research studies).

Figure A-6. Orphan Estimates for the 23 Study Countries, 2010

Country	Population of children <age 15	Maternal and double orphans ¹ from all causes	Maternal/ double orphans as % of children <age 15	% of maternal/ double orphans from AIDS	Paternal orphans ² from all causes ³	Paternal orphans as % of children <age 15	Total orphans from all causes	Total orphans as % of children <age 15
East African Countries								
Burundi	3,629,305	349,544	9.63%	69.40%	285,991	7.88%	635,535	17.51%
Ethiopia	36,564,014	3,181,524	8.70%	53.60%	2,603,065	7.12%	5,784,589	15.82%
Kenya	11,938,922	1,284,954	10.76%	86.80%	1,051,326	8.81%	2,336,280	19.57%
Rwanda	4,320,544	833,779	19.30%	83.40%	682,183	15.79%	1,515,962	35.09%
Tanzania	15,496,154	2,310,002	14.91%	83.40%	1,890,002	12.20%	4,200,004	27.10%
Uganda	12,200,070	1,928,811	15.81%	82.20%	1,578,118	12.94%	3,506,929	28.75%
Southern African Countries								
Botswana	601,357	120,458	20.03%	89.50%	98,557	16.39%	219,015	36.42%
Lesotho	870,860	71,664	8.23%	79.30%	58,634	6.73%	130,298	14.96%
Malawi	4,376,416	861,200	19.68%	86.00%	704,618	16.10%	1,565,818	35.78%
South Africa	15,623,343	1,449,363	9.28%	83.30%	1,185,842	7.59%	2,635,205	16.87%
Zambia	5,402,402	1,145,892	21.21%	88.00%	937,548	17.35%	2,083,440	38.57%
Zimbabwe	4,274,235	842,463	19.71%	93.70%	689,288	16.13%	1,531,751	35.84%
West and Central African Countries								
Burkina Faso	6,565,553	1,014,873	15.46%	85.50%	830,351	12.65%	1,845,224	28.10%
Cameroon	9,223,404	673,494	7.30%	69.30%	551,041	5.97%	1,224,535	13.28%
Central African Republic	1,753,915	224,006	12.77%	75.50%	183,278	10.45%	407,284	23.22%
Congo	1,325,383	118,381	8.93%	77.30%	96,857	7.31%	215,238	16.24%
Côte d'Ivoire	9,020,656	963,662	10.68%	78.00%	788,451	8.74%	1,752,113	19.42%

Figure A-6. Orphan Estimates for the 23 Study Countries, 2010

Dem. Republic of Congo ⁴	32,743,123	2,083,207	6.36%	55.30%	1,704,442	2.78%	3,787,649	11.57%
Nigeria	69,090,458	2,351,430	3.40%	45.40%	1,923,897	5.21%	4,275,327	6.19%
Total, 19 African Countries	245,020,114	21,808,707	8.90%	72.21%	17,843,488	7.28%	39,652,195	16.18%
Non-African Countries								
Brazil	45,421,320	706,540	1.56%	39.30%	578,078	1.27%	1,284,618	2.83%
Guyana	172,246	13,867	8.05%	82.80%	11,346	6.59%	25,213	14.64%
Haiti	3,349,253	170,807	5.10%	45.70%	139,751	4.17%	310,558	9.27%
Thailand	14,102,364	215,737	1.53%	49.80%	176,512	1.25%	392,249	2.78%
Total, Non-African Countries	63,045,183	1,106,951	1.76%	42.88%	905,687	1.44%	2,012,638	3.19%
Total, 23 Study Countries	308,065,297	22,915,658	7.44%	70.79%	18,749,175	6.09%	41,664,833	13.52%

1. Maternal orphans: children who have lost their mothers; double orphans: children who have lost both parents
2. Paternal orphans: children who have lost their fathers
3. A ratio of 35 percent to 65 percent paternal was used to expand the Census Bureau estimates of maternal orphans for 1995.
4. formerly Zaire
Source:
Shaded columns = U.S. Bureau of the Census
Unshaded columns = S. Hunter, 1997(developed using Census Bureau estimates, African censuses, and research studies).

Annex B. Methodology

In September 1996, at the request of USAID, the U.S. Bureau of the Census estimated maternal orphans and double orphans in the 23 countries for which it had made projections about the impact of AIDS. The Census Bureau projects that there will be 22.9 million maternal and double orphans in these countries by 2010, comprising 7.4 percent of children under age 15 (see Figures A–2 through A–6). Using data from censuses and field research, this figure can be extrapolated to project that there will be 41.7 million total orphans in the 23 study countries by 2010. This means that in 2010 13.5 percent of all children under age 15 will have lost one or both of their parents. In Sub-Saharan African countries, these orphans will comprise 16.2 percent of all children under age 15.

An estimated 16.2 million maternal (and double) orphans, or 71 percent of the total, will be AIDS orphans, children whose parents have died from AIDS. As anticipated earlier in the 1990s, this result of the AIDS pandemic will be shocking, particularly when compared to “normal” orphaning rates in countries where AIDS will not have as great an impact.

ORPHAN ESTIMATES BY TYPE

It is possible to build on the Census Bureau’s estimates of maternal and double orphans using African census data, Demographic and Health Survey (DHS) data, and data from other sources. These data show that the ratio of maternal, paternal, and double orphans changes over time as AIDS mortality increases. Censuses conducted in Africa before AIDS indicate a ratio of maternal - paternal - double orphans of 32 - 61 - 7. Two population samples conducted in 1995 as part of the Ugandan and Tanzanian DHSs indicate that the ratio had shifted slightly due to AIDS mortality, to 30 - 60 - 10, which indicates that a higher proportion of orphans have lost both parents. In two areas with

extremely high AIDS mortality,¹ the ratio of maternal - paternal - double orphans was 25 - 55 - 20 and 25 - 50 - 25. It is unclear whether ratios like these are common in severely affected areas, but demographic simulations suggest that, over time, female deaths and the proportion of double orphans both increase.²

Evidence suggests that the epidemic in West Africa (from the former Zaire to Senegal) may differ from the epidemics in Eastern, Central, and Southern Africa. Initial prevalence is less severe in West Africa, and so the epidemic may peak at a lower level and later than in other parts of the Sub-Saharan region.

To develop estimates of total orphans from all causes, we started with the Census Bureau's estimates of maternal and double orphans from all causes. Then, we added the separate ratios for maternal and double orphans from the African census and DHS data together and calculated the complement, or proportion of paternal orphans. Estimates of the total numbers of orphans were obtained by applying different ratios to the Census Bureau estimates (see table below). These estimates demonstrate that estimates for any year are very sensitive to changes in these ratios. For this reason, we selected ratios that produced a relatively smooth growth in orphan populations and were consistent with the estimates of maternal and double orphans provided by the Census Bureau (these appear in bold type).

The ratio used to expand Census Bureau estimates for 1995 was 40 percent maternal and double to 60 percent paternal. This is consistent with the actual data for 1995 from Tanzania and Uganda (30 - 60 - 10 = 40 - 60). Since we lacked definitive data for later years of the epidemic, we changed this ratio (40 - 60) by 5 percent for each five-year interval thereafter (45 - 55 for 2000, 50 - 50 for 2005, and 55 - 45 for 2010). This produced relatively even growth of the total orphan population in Sub-Saharan Africa.

¹ the Rakai District of Uganda and the Kagera Region in Tanzania

² Gregson, S., G. Garnett, and R. Anderson, 1994, "Assessing the Potential Impact of the HIV-1 Epidemic on Orphanhood and the Demographic Structure of Populations in Sub-Saharan Africa," *Population Studies* 48:435-58; Gregson, S., G. Garnett, R. Shakespeare, G. Foster, and R. Anderson, 1994, "Determinants of the Demographic Impact of HIV-1 in Sub-Saharan Africa: The Effect of a Shorter Mean Adult Incubation Period on Trends in Orphanhood," *Health Transition Review* 4:65-92.

Total Number of Orphans in the 23 Study Countries, 1995–2010							
Year	Ratio of (Maternal+ Double) to Paternal	Sub-Saharan Africa	Non-African Countries	Total, 23 Countries	% Increase Sub-Saharan Africa	% Increase Non-African Countries	% Increase, 23 Countries
1995	40 - 60	26,981,895	3,308,955	30,290,850	—	—	—
2000	45 - 55	31,815,173	2,916,042	34,731,216	17.9	–11.9	14.7
2005	45 - 55	40,399,444	2,715,173	43,114,618	26.9	–6.9	24.1
	50 - 50	36,359,500	2,443,656	38,803,156	14.3	–16.2	11.7
	55 - 45	33,054,091	2,221,505	35,275,596	3.9	–23.8	1.6
	60 - 40	30,299,583	2,036,380	32,335,963	–4.8	–30.2	–6.9
2010	45 - 55	48,463,793	2,459,891	50,923,684	33.3	0.7	31.2
	55 - 45	39,652,195	2,012,638	41,664,833	9.1	–17.6	7.4
	60 - 40	36,347,845	1,844,918	38,192,763	–0.03	–24.5	–1.6
	65 - 35	33,551,857	1,703,002	35,254,858	–7.7	–30.3	–9.1

Note: The estimates used in this study are printed in bold.

Note that the orphan populations are projected to decline in the non-Sub-Saharan African countries included in this study. This is due to declines in fertility rates and decreases in the numbers of children born — that is, a decrease of the potential orphan population—rather than to declines in HIV prevalence.

The total number of orphans (maternal, paternal, and double) is roughly two times the number of maternal and double orphans. According to Census Bureau estimates, the number of maternal (including double) orphans from all causes in the 23 countries included in this study will increase from 12.1 million in 1995 to 22.9 million by 2010. The total number of orphans (maternal, paternal, and double) therefore can be expected to increase from 30.3 million in 1995 to 41.7 million in 2010. Between 1995 and 2010, the number of maternal and double orphans will grow from 4.8 percent to 7.4 percent of all children under age 15 in these countries, and the total number of orphans will increase from 9.8 percent to 13.5 percent of children under age 15. In the 19 African countries included in this study, maternal (including double) orphans will increase from 4.9 percent to 8.9 percent of all children under age 15, and the total number of orphans will increase from 12.2 percent to 16.2 percent of all children under age 15.

The estimates of the number of orphans in the 23 countries included in this study underestimate the global burden of AIDS orphans because the study countries are home to only 17 percent of the total population of the countries in the three regions most severely affected by the HIV/AIDS pandemic. Unfortunately, the lack of data about seroprevalence in the countries not included in this study make it impossible to project the global number of AIDS orphans.

The countries that are not included here appear to have less severe AIDS epidemics at present, but it is impossible to say if this is a result of underestimation of the extent of the epidemics (i.e., poor surveillance systems) or to real differences in the epidemics. The Census Bureau has been working with the Joint United Nations Programme on HIV/AIDS (UNAIDS) to examine AIDS databases in many other countries to determine if they are sufficient to develop reliable estimates of the population impact. The Census Bureau's population reports will likely include more countries in future years, which will make it possible to estimate the number of AIDS orphans for these countries.

The Scope of this Study			
Regions Severely Affected by HIV/AIDS	Number of Countries Included in this Study	Number of Countries Not Included in this Study	Percent of the Population Not Included in this Study
Sub-Saharan Africa	19	31	25%
Latin America and Caribbean	3	45	67%
Asia	1	24	98%

METHODS FOR ESTIMATING THE POPULATION IMPACT OF HIV/AIDS

In order to estimate how many children will be orphaned by the HIV/AIDS pandemic over the next 20 years, we first had to estimate the impact of HIV/AIDS on population growth over that period. Orphan estimates require base population estimates, and differences in these estimates produce differences in the orphan estimates. There are six major estimates of the population impact of HIV/AIDS:

- The Population Division of the Department for Economic and Social Information and Policy Analysis of the United Nations Secretariat produces population projections every two years. The 1992 estimates were the first to include the impact of AIDS on future population growth in countries that had an estimated adult HIV prevalence rate of more than 1 percent (15 African countries). Thailand was added in 1994. (United

Nations, 1995, *World Population Prospects: The 1994 Revision*, Sales No. E.95.XIII.16.)

- The U.S. Bureau of the Census prepares worldwide demographic estimates every two years and first included the impact of AIDS in the 1994 projections for countries with urban adult HIV prevalence rates of 5 percent or more (13 African countries and Haiti) as well as for Brazil and Thailand. (Jamison, E. and F. Hobbs, 1994, *World Population Profile: 1994*, Washington, DC: U.S. Bureau of the Census.) In 1996, the Census Bureau completed estimates for 19 Sub-Saharan African countries, Brazil, Guyana, Haiti, and Thailand (McDevit, T., 1996, *World Population Profile: 1996*, Washington, DC: U.S. GPO.)
- The World Bank estimated the impact of AIDS in 1994 as part of population estimates prepared for 13 African countries. (Bos, E., and R. Bulatao, 1994, *World Population Projections: 1994-95 Edition*, Baltimore: Johns Hopkins University Press.) These will not be updated, because in the future the World Bank will use estimates prepared by the U.N. Population Division.
- John Bongaarts of the Population Council projected the impact of AIDS by world region in 1994. (Bongaarts, J., "Global Trends in AIDS Mortality," *Population and Development Review* 22(1):21–45.) While these are not country-specific, they produced similar results to those of the U.N. and World Bank models.
- The Harvard Center for Health and Human Rights prepared two sets of projections for the 1992 and 1996 editions of *AIDS in the World*.³ The 1992 estimates were generally thought to be high. Both sets of estimates are difficult to compare to those produced by the four sources listed above because they are aggregated by ten "Geographic Areas of Affinity," which correspond to ten world regions.
- James Chin, formerly an epidemiologist at WHO/GPA and now professor at the Berkeley School of Public Health, published regional estimates of HIV infections, AIDS cases, and maternal orphans in 1994. (Chin, J., 1994, "The Growing Impact of the HIV/AIDS Pandemic on Children Born to HIV-Infected Women," *Clinics in Perinatology* 21(1):1–14.)

³ Weniger, B. and S. Berkley, 1992, "The Evolving HIV/AIDS Pandemic," *AIDS in the World*, Cambridge, MA: Harvard University Press; Stanecki, K. and P. Way, 1996, "The Dynamic HIV/AIDS Pandemic," *AIDS in the World*, Cambridge, MA: Harvard University Press.

A June 1996 review of estimates of the demographic impact of AIDS found that the methodologies used by most researchers for developing population projections are similar.⁴ A comparison of the models shows that their differences arise from the different parameters they use, including adult HIV prevalence in base year, projections of future prevalence, length of incubation period, perinatal transmission rates, method for including AIDS in projections, length of time from AIDS to death, age and sex distribution of AIDS deaths, and starting year of epidemic. The largest variance stems from three main sources:

- Assumptions about the current severity of the epidemic, as measured by levels of seroprevalence (16 percent of the variance)
- Assumptions about the future severity of the epidemic (56 percent of the variance)
- Assumptions about perinatal transmission rates (7 percent of the variance).

PROJECTING THE NUMBER OF AIDS ORPHANS

A number of researchers, in addition to those at the Census Bureau, have estimated the number of children who will be orphaned by the AIDS pandemic. The most comprehensive are those published by the U.N. Population Division as part of its 1994 population revisions, which include estimates of the number of children under age 10 who will be orphaned by AIDS and other causes for the 15 countries where AIDS seroprevalence was sufficiently high to warrant adjustments in expected populations. One other source provided country-specific estimates for more than one country.⁵ The others provide single-country or regional estimates or simulations. Preble, for example, estimated a regional total for ten Sub-Saharan African countries that have the most severe epidemics.⁶ WHO/GPA estimated the global total of AIDS orphans in 1991, and Chin estimated regional totals in 1995.⁷

Most of the estimates are calculated using a demographic model, although several rely on enumeration and census data. When applying a demographic model, the researcher first estimates the impact of AIDS mortality on women of childbearing age (ages 18–49). The

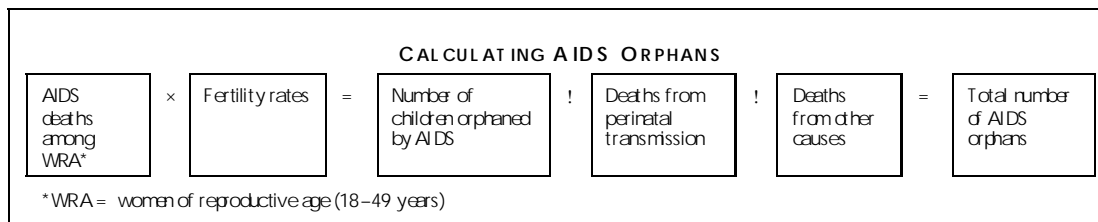
⁴ Stover, J., 1996, "The Future Demographic Impact of AIDS: What Do We Know?" *AIDS and Development: The Role of Government*, Chateau de Limelette, France.

⁵ Levine, C., and D. Michaels, 1996, "Orphans of the HIV/AIDS Pandemic," *AIDS in the World*, Cambridge, MA: Harvard University Press.

⁶ Preble, E., 1990, "Impact of HIV/AIDS on African Children," *Social Science and Medicine* 31(6):671–80.

⁷ World Health Organization/Global Programme on AIDS, 1992, "Current and Future Dimensions of the HIV/AIDS Pandemic: A Capsule Summary," WHO/GPA/RES/SFI/92.1, Geneva.

number of women who will die of AIDS is then multiplied by their expected fertility (total or age-specific), which yields the total number of children who will be orphaned by AIDS. From these orphans are subtracted the number of children who will die of HIV-related causes (perinatal transmission) and non-HIV-related causes. What remains is the total number of orphaned children expected to survive until age 15. Each modeler subtracts children who reach the age of 15 and adds children who are newly orphaned, using a cumulative cohort technique.



While the basic formula used to develop these various orphan estimates is similar, the estimates differ substantially because of differences in the variables included in the model. The most important sources of differences in the estimates of orphans are the same as those that led to differences in population estimates — beginning and future seroprevalence, variations in incubation and survival periods, and perinatal transmission. However, other variables also play a critical role in estimating the number of AIDS orphans, including the fertility of women of childbearing age, which determines the number of children orphaned by each female death, and estimates of infant mortality from AIDS and other causes, which determine how many children survive in each age group.

Estimates of infection rates (prevalence) and the level and timing at which they eventually peak also are critical for estimating when the number of orphans will peak in a given country. None of the researchers who have made AIDS estimates have included the impact of HIV/AIDS morbidity and mortality on female fertility or the impact of adult and child mortality rates on the survival of AIDS orphans who are not infected with HIV, although some studies suggest that these will be considerable.⁸ As noted previously, evidence suggests that the epidemic in West Africa (from the former Zaire to Senegal) may differ from the epidemic in Eastern, Central, and Southern Africa. Specifically, initial prevalence

⁸ Ainsworth, M., D. Filmer, and I. Semali, 1995, "The Impact of AIDS Mortality on Individual Fertility: Evidence from Tanzania," Washington, DC: National Research Council; Hunter, S., T. Barton, and L. Sserunjogi, 1992, "Final Report on the Survey of Infant and Child Health and Nutrition," Kampala: UNICEF and the Child Health Development Centre, Makerere University; Hunter, S., F. Kaijage, P. Maack, A. Kiondo, P. Masanja, 1997, "Using Rapid Research to Develop a National Strategy to Assist Families Affected by AIDS in Tanzania," *Health Transition Review* (forthcoming).

is less severe in West Africa, and so the epidemic may peak at lower levels and later than in other parts of the Sub-Saharan region.

It is difficult to compare orphan estimates because they vary by orphan type (maternal, paternal, or double), country, age group, and age of the epidemic. However, some summary observations may be made.

Hunter's enumeration data and Preble's estimates are comparable to the simulations of Gregson, Garnett, and Anderson and to those of Palloni and Lee. Early single-country estimates are similar (Hunter and Ainsworth), largely because they were based on empirical data, although Hunter's enumeration produced lower figures than the Ugandan census estimates produced two years later. A similar variation was seen in the 1991 and 1992 Zimbabwean enumerations reported in Foster et al.⁹ While they may capture a sudden mushrooming of orphan populations, the earlier numbers are more likely to reflect undercounting due to the difficult conditions for enumeration.

The Census Bureau estimates contained in this report — that there will be 7.5 million *maternal and double* AIDS orphans by 2000 in Sub-Saharan Africa — are 15 percent lower than the 1991 WHO/GPA estimates that there will be 9 million *maternal* AIDS orphans in Sub-Saharan Africa by 2000. This variation is probably arises from a difference in coverage: the Census Bureau estimates are for 19 countries, while the WHO estimates are for the entire region.

The Census Bureau estimates accord closely with Preble's estimates (1990) for ten Sub-Saharan African countries. Preble estimated that there would be 3.1–5.5 million maternal AIDS orphans in 2000, which would comprise 6–11 percent of children under age 15. The comparable Census Bureau figure for the ten countries included in Preble's estimate is 4.3 million and 5.8 percent of children under age 15.

Chin (1994) estimated a regional total of 5.2 million AIDS orphans by 2000, compared to the Census Bureau's estimate of 7.5 million.

The Census Bureau estimates compare well with the higher estimates made by Levine and Michaels in the 1996 edition of *AIDS in the World*. The aggregate difference between the two is 11.4 percent.

⁹ Foster, G., C. Makufa, R. Drew, S. Kambeu, and K. Saurombe, "Supporting Children in Need Through a Community-based Orphan Visiting Programme," poster, IXth International Conference on AIDS and STDs in Africa, December 1995, Kampala

Many Sub-Saharan African countries have prepared their own estimates of the number of AIDS orphans in 2000. Those included here compare favorably with the Census Bureau estimates. The estimates prepared for Côte d'Ivoire are of children born to HIV-positive women.¹⁰ If 39 percent of these children are subtracted from this estimate to allow for deaths due to perinatal transmission, the Census Bureau estimates of orphans is 6 percent higher. Census Bureau estimates compare well with the estimates of Malawi's National AIDS Control Programme but are only half of Lodh's estimates for Malawi (prepared in 1995).

A comparison of the United Nations' 1994 estimates and the Census Bureau estimates show less agreement (see table below). For the 13 countries for which U.N. estimates are available for 2005, the Census Bureau estimates exceed the U.N. estimates by 1.5 million children under age 10, or 39 percent. Individual country differences range from 3,000 to 355,000, or !3 percent to +85 percent. Differences most likely arise from different assumptions about the level of future fertility rates and the other factors mentioned earlier.

In 1995, Brown and Sittitrai estimated a total of 161,000 maternal AIDS orphans in Thailand by 2005, while the Census Bureau estimates are almost half that (92,484, or 57 percent).¹¹ The Census Bureau utilized newer seroprevalence data, which indicate a major decline in the incidence of HIV over the past several years in Thailand due to stringent government measures to control the disease.

New census data is available for Uganda (1991) and may become available soon for Kenya and Malawi. The 1995 Zimbabwean census enumerated orphans, but no detailed publication is available. The U.S. Census Bureau estimated that there were 583,278 orphans from all causes in 1990 in Uganda, which is more than twice the actual count of 240,936 orphans of all causes under age 15 reported by the Ugandan Statistics Department in 1991. However, it appears that this early difference may have been due to a reluctance of Ugandans to report children as orphans, which is common in African censuses. Furthermore, while the discrepancy between the 1990 estimates is large, the differences between Census Bureau and official Ugandan government estimates for 2000 and beyond are much smaller. In addition, the 1995 Ugandan DHS reported that 13 percent of all children under age 15 were orphans, compared to Census Bureau estimates of 9.2 percent for 1995.

¹⁰ Soro, B. N., G.M. Gershy-Damet, A. Coulibaly, K. Konan, and P. A. Sato, 1992, "The Present and Future Course of the AIDS Epidemic in Cote D'Ivoire," *Bulletin of the World Health Organization* 70(1):117–23.

¹¹ Brown, P. and W. Sittitrai, 1995, *The Impact of HIV/AIDS on Children in Thailand*, Bangkok: Thai Red Cross Society.

A Comparison of U.N. and U.S. Census Bureau Orphan Estimates for Selected Countries (Number of Children under Age 10 Orphaned by AIDS in 2005)				
Country	Census Bureau (thousands)	United Nations (thousands)	Difference (Census Bureau minus U.N. in thousands)	Difference as a Percentage of Census Bureau Estimates)
Burkina Faso	368.6	198.9	169.7	85
Burundi	128.8	99.1	29.7	30
Central African Republic	82.6	45.5	37.1	82
Congo	47.3	51.0	-3.7	-7
Côte d'Ivoire	374.2	315.0	59.2	19
Democratic Republic of Congo (formerly Zaire)	866.7	716.6	150.1	21
Kenya	463.7	479.1	-15.4	-3
Malawi	329.0	207.7	121.3	58
Rwanda	307.9	165.9	132.0	80
Tanzania	840.3	485.5	354.8	73
Uganda	736.8	599.6	137.2	23
Zambia	450.1	235.6	214.5	48
Zimbabwe	333.3	217.2	116.1	53
Total	5,329.3	3,816.7	1,502.6	39

Annex C. Contributors

Preparation of this document would not have been possible without the commitment and assistance of many individuals and organizations around the world.

Susan Hunter prepared the sections of the report dealing with orphan estimates and methods; family structure; adoption and fostering; the impact of HIV/AIDS on children, families, and communities; and costs and financing. She contributed portions of the chapters on intervention strategies and going to scale and was responsible for drawing the material in the report into its final form.

Susan Hunter has a PhD in medical anthropology from the State University of New York at Albany. Her experience with AIDS orphans began in 1989 as a Rockefeller Foundation fellow at Makerere University in Uganda, where she directed graduate students in a Save the Children/UK-sponsored study working with village leaders to enumerate orphans of AIDS in four districts of Uganda. This was the first data describing the scope of the problem that reached the international community, although communities in parts of Uganda heavily afflicted with HIV/AIDS had begun conducting enumerations in advance of that project. She assisted the United Nations Children's Fund (UNICEF) in developing a prototype, community-based assistance program in Uganda in 1990 and has subsequently assisted UNICEF at the global level in devising strategies for assistance in individual countries. She has worked in New York researching HIV/AIDS among migrant women. She managed USAID's HIV/AIDS program in Tanzania for two-and-a-half years and served on teams to design country-wide prevention and care programs in Malawi, Ethiopia, and Zambia. She has published widely on AIDS and health-related issues.

John Williamson contributed the sections on approaches and interventions. He has an MSW in social welfare from the University of California at Berkeley. He worked for the Office of the United Nations High Commissioner for Refugees for ten years, during which time he gave particular attention to the needs of children, particularly those separated from their families. In 1991, he applied lessons learned from this work as part of a team sent to

Uganda by the U.S. Agency for International Development's (USAID's) Displaced Children and Orphans Fund (DCOF). On this assignment, he advised the government on strategies for managing the country's emerging orphan crisis. He worked with Sue Armstrong to write *Action for Children Affected by AIDS: Program Profiles and Lessons Learned*, which was published in 1994 by the World Health Organization (WHO) and UNICEF. He is a technical advisor for DCOF, assessing needs and reviewing programs for children orphaned by AIDS and children unaccompanied due to armed conflict. His book, *Children and Families Affected by HIV/AIDS: Guidelines for Action*, is forthcoming from UNICEF and UNAIDS (Geneva).

The U.S. Agency for International Development supported development of this report. Holly Fluty and Paul DeLay in USAID's HIV/AIDS Division conceptualized this report and championed its preparation.

Those who work for the Displaced Children and Orphans Fund, under the leadership of Lloyd Feinberg, deserve recognition for their efforts to fashion programs that assist not only AIDS survivors but children who are displaced by war and refugee movements.

Karen Stanecki and Peter Way of the International Programs Center of the U.S. Bureau of the Census prepared the estimates of maternal and double orphans included in this study. Eduardo Arriaga reviewed the projections and mortality calculations. The International Programs Center prepares all of the baseline population projections required for these estimates and prepares an important update on epidemic trends every two years.

Five international experts on AIDS agreed to serve as peer reviewers for this study. According to the requirements of the USAID-led peer review process, they will remain anonymous.

At the Health Technical Services (HTS) Project, Denise Lionetti and her able staff supported USAID in conceptualizing and creating the global HIV/AIDS strategy and related documents and tools. Linda Griffin Kean, consultant to HTS, drafted the executive report and edited and formatted the final report.